

ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2  
204018 ASSAULT BREAKER MISSILE NUMBER 0004 ROUND NUMBER M2A1, 2--ETC(U)  
MAY 81 D C KELLER  
ERADCOM/ASL-OR-1179 NL

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DR 1179 ✓  
May 1981

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METEOROLOGICAL DATA REPORT

20401B Assault Breaker  
Missile No. 0004  
Round No. M2A1  
20 May 1981

by

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ELECTE  
JUL 17 1981  
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ATMOSPHERIC SCIENCES LABORATORY  
WHITE SANDS MISSILE RANGE, NEW MEXICO

ECOM

UNITED STATES ARMY ELECTRONICS COMMAND

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)  Meteorological data gathered for the launching of the 20401B Assault Breaker, Missile Number 0004, Round Number M2A1 presented in tabular form.			

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# CONTENTS

	PAGE
INTRODUCTION-----	1
DISCUSSION-----	1
MAP-----	2
TABLES:	
1. Surface Observation taken at 1010 MDT at LC-33-----	3
2. Anemometer-Measured Wind Speed and Direction, LC-33 Fixed Pole, taken at 1010 MDT-----	4
3. Anemometer-Measured Wind Speed and Direction, Tower Levels 1, 2, 3, and 4, taken at 1010 MDT-----	4
4. LC-33 Pilot-Balloon Measured Wind Data at 1005 MDT-----	5
5. LC-33 Pilot-Balloon Measured Wind Data at 1022 MDT-----	6
6. Surface Observations taken at 0930 MDT, 1000 MDT, and 1030 MDT at JAL-----	7
7. JAL Aiming Computer Met Message taken at 0730 MDT-----	8
8. JAL Significant Level Data at 0730 MDT-----	9
9. JAL Upper Air Data at 0730 MDT-----	10
10. JAL Mandatory Levels at 0730 MDT-----	12
11. LC-37 Significant Level Data at 0900 MDT-----	13
12. LC-37 Upper Air Data at 0900 MDT-----	15
13. LC-37 Mandatory Levels at 0900 MDT-----	21
14. HMS Significant Level Data at 0900 MDT-----	22
15. HMS Upper Air Data at 0900 MDT-----	24
16. HMS Mandatory Levels at 0900 MDT-----	29
17. JAL Significant Level Data at 0900 MDT-----	30

TABLES CON'T

	PAGE
18. JAL Upper Air Data at 0900 MDT-----	31
19. JAL Mandatory Levels at 0900 MDT-----	33
20. WSD Significant Level Data at 1000 MDT-----	34
21. WSD Upper Air Data at 1000 MDT-----	36
22. WSD Mandatory Levels at 1000 MDT-----	42
23. JAL Significant Level Data at 1000 MDT-----	43
24. JAL Upper Air Data at 1000 MDT-----	45
25. JAL Mandatory Levels at 1000 MDT-----	51

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## INTRODUCTION

20401B Assault Breaker, Missile Number 0004, Round Number M2A1, was launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1010 MDT, 20 May 1981. The scheduled launch time was 1000 MDT.

## DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

### 1. Observations

#### a. Surface

(1) Standard surface observations to include pressure, temperature (C), relative humidity, dew point (C), density ( $\text{gm/m}^3$ ), wind direction *CU M* and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes, and at the Jallen Met Site at T-30, T-0, and T+30 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometer at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

#### b. Upper Air

(1) Low level wind data were obtained from RAPTS T-9 pibal observation at

### SITE AND ALTITUDE

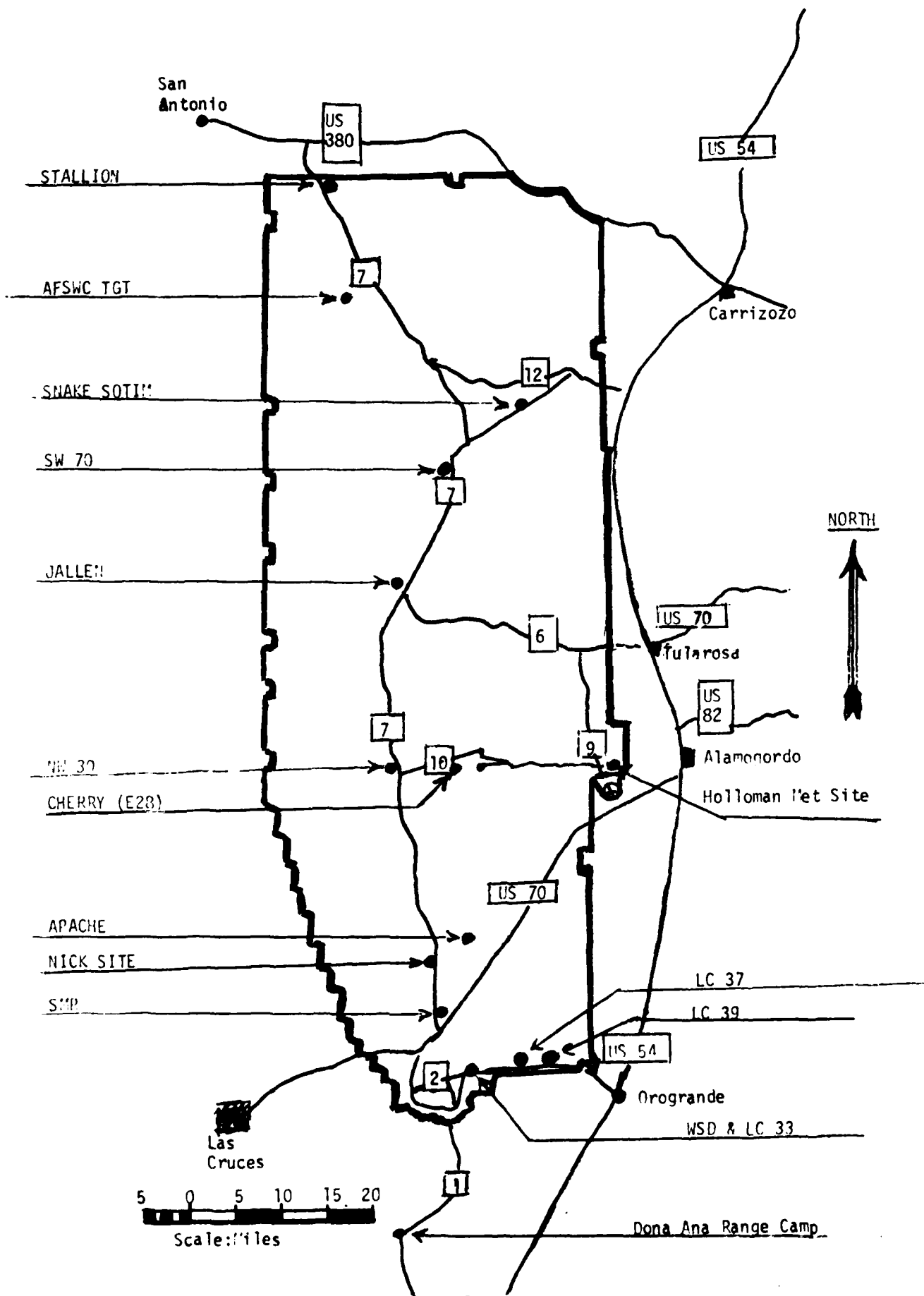
LC-33 2760 meters,

(2) Air structure data (rawinsonde) were collected at the following Met Sites:

### SITE AND TIME

JAL	0730 MDT
LC-37	0900 MDT
HMS	0900 MDT
JAL	0900 MDT
WSD	1000 MDT
JAL	1000 MDT





# PROJECT SURFACE OBSERVATION

TABLE 1		STATION LC-33											
DATE 20 MAY 1981		X= 484,982.64		Y= 185,957.73		H= 3983.00							
TIME M D I		DAY	MONTH	YEAR	PRESSURE mbs	TEMPERATURE OF °C	DEW POINT OF °F	RELATIVE HUMIDITY %	DENSITY gm/m <sup>3</sup>	DIRECTION degs In	WIND SPEED kts	CHARACTER kts	VISIBILITY
1010					878.8	21.2		45	1030	180	06		40

OBSTRUCTIONS TO VISIBILITY	CLOUDS						REMARKS
	1st LAYER		2nd LAYER		3rd LAYER		
	AMT	TYPE	AMT	TYPE	AMT	TYPE	
	8	CI					

## PSYCHROMETRIC COMPUTATION

TIME: MDT	1010	
DRY BULB TEMP.	21.2	
WET BULB TEMP.	13.6	
WET BULB DEPR.	7.6	
DEW POINT	8.7	
RELATIVE HUMID.	45	

TABLE 2 LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

POLE #1 X485,874.29 Y185,958.90 H4018.74 38.7 ft. AGL			POLE #2 X485,874.93 Y186,012.00 H4033.57 53.0 ft. AGL			POLE #3 X485,877.29 Y186,116.06 H4063.92 83.6 ft. AGL		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	164	06	T-30	166	05	T-30	166	08
T-20	160	06	T-20	156	04	T-20	159	08
T-10	145	05	T-10	154	03	T-10	154	06
T 0.0	149	04	T 0.0	158	03	T 0.0	165	06
T+10	171	04	T+10	184	03	T+10	168	06

TABLE 3 LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1, 12 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #2, 62 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	165	08	T-30	180	05
T-20	172	05	T-20	193	04
T-10	171	07	T-10	185	06
T 0.0	164	08	T 0.0	180	07
T+10	175	05	T+10	188	05

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 202 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	177	06	T-30	142	07
T-20	180	05	T-20	169	08
T-10	180	06	T-10	174	06
T 0.0	175	08	T 0.0	171	09
T+10	180	06	T+10	167	07

TABLE 4

PILOT-BALLOON MEASURED WIND DATA

RELEASED FROM LC-33

DATE 20 May 1981

TIME 1005 MDT

HEIGHT AGL	DIRECTION DEGREES	SPEED KNOTS
SFC	150	02
60	MISSING	
120	MISSING	
180	168	05
240	175	09
300	174	11
360	170	12
420	177	13
480	174	15
540	171	16
600	172	16
660	164	16
720	164	17
780	167	16
840	174	18
900	184	18
960	182	21
1020	179	22
1080	185	23
1140	187	25
1200	188	23
1260	190	20
1320	196	26
1380	196	28
1440	197	26
1500	196	26
1560	195	21
1620	196	32
1680	197	28
1740	201	31
1800	200	31

[illegible][illegible]

TABLE 5

## PILOT-BALLOON MEASURED WIND DATA

RELEASED FROM LC-33

DATE 20 May 1981

TIME 1022 MDT

HEIGHT AGL	DIRECTION DEGREES	SPEED KNOTS
sfc	180	06
60	MISSING	
120	MISSING	
180	MISSING	
240	164	09
300	165	11
360	155	11
420	159	12
480	161	16
540	157	15
600	155	15
660	179	15
720	168	22
780	174	22
840	167	22
900	171	23
960	179	22
1020	170	23
1080	177	28
1140	192	23
1200	199	26
1260	202	26
1320	201	24
1380	200	25
1440	200	28
1500	199	29
1560	200	25
1620	201	25
1680	201	28
1740	198	30
1800	200	27

[illegible][illegible]

# PROJECT SURFACE OBSERVATION

TABLE 6		STATION JALLEN									
DATE 20 MAY 1981		X= 450.491.60		Y= 464.023.05		H= 4053 FT.					
TIME	WIND	PRESSURE	TEMPERATURE	DEW POINT	RELATIVE	DENSITY	DIRECTION	SPEED	CHARACTER	VISIBILITY	
M D T		mbs	OF OC	OF	%	gm/m <sup>3</sup>	degs In	kts	kts		
0930		875.7	21.0	8.9	46	1031	190	11		40	
1000		875.3	20.6	8.7	46	1032	185	12		40	
1030		874.9	22.5	9.7	45	1024	170	15		40	

OBSTRUCTIONS TO VISIBILITY	CLOUDS						REMARKS
	1st LAYER		2nd LAYER		3rd LAYER		
	AMT	TYPE	AMT	TYPE	AMT	TYPE	
	1	CU	5500	9	CS	19000	
	1	CU	5500	9	CS	19000	
	1	CU	5500	9	CS	19000	

## PSYCHROMETRIC COMPUTATION

TIME:	0930	1000	1030
DRY BULB TEMP.	21.0	20.6	22.5
WET BULB TEMP.	13.6	13.3	14.5
WET BULB DEPR.	7.4	7.3	8.0
DEW POINT	8.9	8.7	9.7
RELATIVE HUMID.	47%	46%	45%

TABLE 7

AIMING MET MESSAGE  
20 May 1981

JAL 0730 MDT  
METCM1332065  
201350124876

00320003	29050876
01344010	28970865
02312024	28820840
03272031	28660801
04292028	28240755
05354024	28020710
06372034	27750668
07349041	27380628
08365047	27040590
09392057	26740554
10384058	26440519
11385052	26110487
12407060	25630441
13429057	24960385

STATION ALTITUDE 4051.00 FEET MSL  
 20 MAY 81 0730 HRS MDT  
 ASCENSION NO. 34

SIGNIFICANT LEVEL DATA  
 1400030034  
 JALLEN

TABLE 8

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
875.7	4051.0	16.1	7.1	55.0
850.0	4880.2	14.0	5.9	58.0
799.0	6591.7	12.4	5.3	62.0
735.0	8868.9	6.0	2.6	79.0
700.0	10184.4	6.4	-4.9	44.0
604.8	14066.0	-2.0	-12.6	44.0
500.0	18949.1	-11.8	-30.1	20.0
465.8	20723.8	-14.6	-33.0	19.0
433.6	22498.3	-17.6	-30.6	31.0
418.4	23373.8	-19.7	-29.0	43.0
400.0	24468.5	-21.7	-26.0	68.0
379.6	25730.5	-24.6	-28.3	71.0
345.6	27958.3	-29.3	-35.6	54.0
300.0	31233.2	-37.0	-43.9	48.0

GEODETIC COORDINATES  
 33.16712 LAT DEG  
 106.49511 LON DEG



STATION ALTITUDE 4051.00 FEET MSL  
20 MAY 81 0300 HRS MDT  
ASCENSION NO. 34

UPPER AIR DATA  
1400030034  
JALLEN

TABLE 9

GEODETTIC COORDINATES  
33.16712 LAT DEG  
106.49511 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (IN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
4051.0	875.7	16.1	7.1	55.0	1050.1	664.0	180.0	3.1	1.000280
4500.0	861.7	15.0	6.4	56.6	1037.5	662.7	164.1	8.4	1.000275
5000.0	845.3	13.9	5.8	58.3	1022.9	661.4	160.4	14.5	1.000271
5500.0	831.2	13.4	5.7	59.4	1006.2	660.9	158.9	20.6	1.000266
6000.0	816.3	13.0	5.5	60.6	989.7	660.3	158.0	26.7	1.000262
6500.0	801.7	12.5	5.4	61.8	973.6	659.8	157.2	28.4	1.000259
7000.0	787.1	11.3	4.9	65.0	960.1	658.4	156.5	29.7	1.000255
7500.0	772.8	9.8	4.4	68.8	947.4	656.7	159.3	28.6	1.000251
8000.0	756.8	8.4	3.8	72.5	935.0	655.1	163.7	26.8	1.000247
8500.0	745.0	7.0	3.1	76.2	922.7	653.4	170.9	25.2	1.000243
9000.0	731.4	6.0	2.0	75.5	909.3	652.1	181.1	24.3	1.000237
9500.0	718.0	6.2	-0.5	62.2	892.6	652.1	191.7	24.3	1.000228
10000.0	704.8	6.3	-3.6	48.9	876.3	652.1	201.4	27.1	1.000218
10500.0	691.7	5.7	-5.6	44.0	862.2	651.3	209.0	30.6	1.000212
11000.0	678.8	4.6	-6.5	44.0	849.5	650.0	209.2	32.7	1.000208
11500.0	660.2	3.6	-7.5	44.0	837.0	648.7	208.1	34.5	1.000204
12000.0	653.7	2.5	-8.5	44.0	824.7	647.4	204.2	36.2	1.000200
12500.0	641.5	1.4	-9.5	44.0	812.6	646.1	199.0	38.3	1.000196
13000.0	629.6	.3	-10.5	44.0	800.7	644.8	197.1	39.9	1.000192
13500.0	617.8	-0.8	-11.5	44.0	789.0	643.5	196.9	41.3	1.000189
14000.0	606.3	-1.9	-12.5	44.0	777.4	642.1	200.1	42.4	1.000185
14500.0	594.7	-2.9	-14.0	41.9	765.5	640.9	204.9	43.7	1.000181
15000.0	583.2	-3.9	-15.6	39.4	753.6	639.7	210.6	46.1	1.000177
15500.0	571.9	-4.9	-17.3	37.0	741.9	638.4	216.5	49.4	1.000174
16000.0	560.9	-5.9	-19.0	34.5	730.4	637.2	219.8	52.1	1.000170
16500.0	550.1	-6.9	-20.7	32.0	719.1	636.0	221.2	53.7	1.000166
17000.0	539.5	-7.9	-22.5	29.6	708.0	634.7	220.8	54.4	1.000163
17500.0	529.0	-8.9	-24.4	27.1	697.0	633.5	217.9	53.9	1.000160
18000.0	518.8	-9.9	-26.3	24.7	686.2	632.3	215.4	53.9	1.000157
18500.0	508.8	-10.9	-28.3	22.2	675.6	631.0	214.1	55.0	1.000154
19000.0	499.0	-11.9	-30.2	20.0	665.1	629.8	213.6	56.7	1.000151
19500.0	489.1	-12.7	-31.0	19.7	653.9	628.9	214.5	59.5	1.000148
20000.0	479.5	-13.5	-31.9	19.4	643.0	627.9	216.6	60.5	1.000146
20500.0	470.0	-14.2	-32.7	19.1	632.2	626.9	220.3	59.4	1.000143
21000.0	460.6	-15.1	-33.5	20.9	621.6	626.0	224.3	58.3	1.000141
21500.0	451.4	-15.9	-31.7	24.2	611.1	624.9	228.6	57.3	1.000139
22000.0	442.4	-16.8	-31.0	27.6	600.9	623.9	230.9	57.4	1.000136
22500.0	433.6	-17.6	-30.6	31.0	590.8	622.9	232.1	58.1	1.000134
23000.0	424.8	-18.8	-29.6	37.9	581.6	621.5	233.6	58.1	1.000133
23500.0	416.2	-19.9	-28.6	45.9	572.3	620.1	235.3	57.8	1.000131

STATION ALTITUDE 4051.00 FEET MSL  
20 MAY 81 0730 HRS MDT  
ASCENSION NO. 34

UPPER AIR DATA  
1400030034  
JALLEN

GEODETIC COORDINATES  
33.16712 LAT DEG  
106.49511 LON DEG

TABLE 9 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CURIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
24000.0	407.8	-20.8	-27.0	57.3	562.7	619.0	237.0	57.6	1.000129
24500.0	399.5	-21.8	-26.0	68.1	553.2	617.9	238.4	57.8	1.000128
25000.0	391.3	-22.9	-27.0	69.3	544.4	616.5	239.8	58.0	1.000125
25500.0	383.2	-24.1	-27.9	70.5	535.7	615.0	239.8	58.7	1.000123
26000.0	375.3	-25.2	-29.2	68.9	527.0	613.7	239.8	59.4	1.000121
26500.0	367.5	-26.2	-30.8	65.1	518.2	612.3	239.1	59.9	1.000118
27000.0	359.8	-27.3	-32.4	61.3	509.6	611.0	238.0	60.3	1.000116
27500.0	352.3	-28.3	-34.1	57.5	501.2	609.7	237.1	60.5	1.000114
28000.0	345.0	-29.4	-35.7	53.9	492.9	608.3	236.5	60.1	1.000112
28500.0	337.6	-30.6	-37.0	53.0	484.7	606.8	236.0	60.0	1.000110
29000.0	330.4	-31.7	-38.3	52.1	476.7	605.4	236.3	60.7	1.000108
29500.0	323.3	-32.9	-39.5	51.2	468.8	603.9	236.5	62.6	1.000106
30000.0	316.4	-34.1	-40.8	50.3	461.0	602.4	236.5	66.5	1.000104
30500.0	309.7	-35.3	-42.1	49.3	453.4	600.9	236.6		1.000102
31000.0	303.0	-36.5	-43.3	48.4	445.9	599.4			1.000100

STATION ALTITUDE 4051.00 FEET ASL  
20 MAY 81 07.30 HRS MDT  
ASCENSION NO. 34

MANDATORY LEVELS  
1400030034  
JALLEN  
TABLE 10

GEODETIC COORDINATES  
33.16712 LAT DEG  
106.49511 LON DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	4877.	14.0	5.9	58.	161.0	13.0
800.0	6552.	12.4	5.3	62.	157.2	28.5
750.0	8316.	7.5	3.4	75.	167.5	25.7
700.0	10175.	6.4	-4.9	44.	204.3	28.3
650.0	12155.	2.1	-8.8	44.	202.4	30.9
600.0	14258.	-2.4	-13.3	43.	202.7	43.1
550.0	16506.	-6.9	-20.8	32.	221.2	53.7
500.0	18924.	-11.8	-30.1	20.	213.5	50.3
450.0	21550.	-16.0	-31.5	25.	229.3	57.1
400.0	24429.	-21.7	-26.0	60.	238.2	57.8
350.0	27612.	-28.7	-34.6	56.	236.9	60.4
300.0	31173.	-37.0	-43.9	48.		

GEODETIC COORDINATES  
32.40175 LAT DEG  
106.31232 LON DEG

SIGNIFICANT LEVEL DATA  
1400180096  
LC-37

TABLE 11

STATION ALTITUDE 4051.37 FFF1 MSL  
20 MAY 81  
ASCENSION NO. 96

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
677.4	4051.4	20.1	9.4	50.0
867.0	4387.4	16.8	6.3	50.0
850.0	4939.6	14.4	5.5	55.0
811.4	6222.7	11.0	4.7	65.0
785.2	7123.6	10.9	5.0	67.0
765.8	7811.5	12.1	5.3	55.0
756.6	8144.5	12.6	-5.4	28.0
747.2	8488.9	12.7	-10.3	19.0
700.0	10271.2	8.0	-17.0	15.0
692.2	10574.3	7.4	-17.5	15.0
674.2	11285.9	7.1	-19.4	13.0
647.2	12383.9	4.4	-20.7	14.0
559.8	16188.5	-6.4	-17.4	41.0
526.6	17749.4	-10.1	-25.5	27.0
500.0	19058.4	-12.0	-34.7	13.0
470.4	20585.7	-14.8	-37.0	13.0
455.0	21414.8	-14.5	-36.7	13.0
424.6	23125.9	-18.3	-35.2	21.0
416.2	23616.2	-18.9	-24.7	60.0
406.9	24169.2	-19.9	-26.6	55.0
400.0	24586.0	-21.0	-27.0	58.0
380.4	25803.5	-22.7	-31.5	44.0
366.2	26717.8	-25.1	-35.0	39.0
345.8	28078.9	-28.7	-38.2	39.0
329.1	29239.0	-31.5	-42.6	32.0
306.8	30804.6	-34.3	-48.9	21.0
300.0	31379.4	-35.7		
264.6	34206.0	-43.8		
250.0	35454.1	-46.6		
200.0	40163.2	-62.3		
167.8	43699.9	-66.6		
159.4	44718.9	-68.7		
150.0	45917.7	-69.1		
140.8	47152.8	-73.1		
135.2	47844.3	-69.4		
124.0	49651.6	-68.1		
120.8	50172.5	-65.8		
113.8	51368.9	-65.6		
110.4	51981.6	-62.6		
103.4	53314.1	-62.7		

STATION ALTITUDE 4051.37 FEET MSL  
20 MAY 81 0900 HRS MDT  
ASCENSION NO. 96

SIGNIFICANT LEVEL DATA  
1400180096  
LC-37

GEODETIC COORDINATES  
32.40175 LAT DEG  
106.51232 LONG DEG

TABLE 11 CONT

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE		REL. HUM. PERCENT
	AIR DEGREES	DEWPOINT CENTIGRADE	
100.0	53.96.7	-61.1	
97.0	54.623.3	-59.5	
82.2	58.023.3	-61.9	
79.4	58.734.3	-60.0	
74.0	60.177.2	-62.6	
70.0	61.308.7	-62.6	
65.5	62.670.8	-59.8	
59.0	64.822.2	-60.9	
50.0	68.264.0	-55.6	
30.0	79.133.3	-51.2	
24.2	83.790.4	-47.7	
20.0	87.966.6	-46.6	
13.6	96.643.7	-35.8	
10.0	103.735.8	-35.3	
9.5	104.923.3	-34.2	

STATION ALTITUDE 4051.37 FEET MSL  
20 MAY 81 0900 HRS MDT  
ASCENSION NO. 96

UPPER AIR DATA  
1400180096  
LC-37

GEODETIC COORDINATES  
32.40175 LAT DEG  
106.31232 LON DEG

TABLE 12

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES	DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup>	WIND SPEED KNOTS	WIND DIRECTION DEGREES (TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
4051.4	877.4	20.1	9.4	50.0	1037.0	668.8	145.0	6.0	1.000283
4500.0	863.5	16.3	6.2	51.0	1034.9	664.2	150.3	7.6	1.000273
5000.0	840.1	14.2	5.5	55.5	1024.0	661.8	154.2	9.3	1.000270
5500.0	832.9	12.9	5.2	59.4	1010.2	660.2	150.6	11.1	1.000266
6000.0	810.0	11.6	4.9	63.3	996.7	658.7	150.6	12.9	1.000262
6500.0	803.2	11.0	4.8	65.6	980.9	658.0	150.1	16.3	1.000259
7000.0	780.7	10.9	5.0	66.7	963.2	658.0	177.6	21.4	1.000256
7500.0	774.5	11.6	4.2	60.4	943.9	658.7	185.7	24.9	1.000249
8000.0	760.6	12.4	-9	39.7	925.3	659.2	193.1	27.8	1.000233
8500.0	740.9	12.7	-10.3	10.0	909.1	659.1	198.2	29.1	1.000215
9000.0	733.3	11.4	-12.2	17.9	896.9	657.5	202.4	29.5	1.000211
9500.0	720.0	10.0	-14.1	16.7	884.8	655.9	205.0	30.5	1.000207
10000.0	707.0	8.7	-16.0	15.6	873.0	654.4	206.5	31.8	1.000203
10500.0	694.1	7.5	-17.4	15.0	860.7	653.0	208.1	33.8	1.000199
11000.0	681.4	7.2	-18.6	13.8	846.0	652.6	209.6	36.2	1.000195
11500.0	668.8	6.6	-19.7	13.2	832.4	651.8	210.1	37.5	1.000192
12000.0	650.5	5.3	-20.2	13.7	820.7	650.4	210.3	38.3	1.000189
12500.0	644.3	4.1	-20.3	14.8	809.1	648.9	212.7	38.2	1.000186
13000.0	632.2	2.7	-19.0	18.4	797.9	647.2	216.0	37.9	1.000184
13500.0	620.2	1.2	-18.1	21.9	786.8	645.6	221.0	38.3	1.000183
14000.0	600.5	-2	-17.6	25.5	775.9	644.0	225.7	39.3	1.000181
14500.0	597.0	-1.6	-17.3	29.0	765.2	642.3	225.2	40.8	1.000179
15000.0	585.8	-3.0	-17.1	32.6	754.6	640.6	220.7	42.2	1.000176
15500.0	574.7	-4.4	-17.2	36.1	744.3	638.9	217.9	43.0	1.000174
16000.0	563.8	-5.9	-17.4	39.7	734.1	637.2	217.1	43.4	1.000172
16500.0	553.0	-7.1	-18.9	38.2	723.5	635.7	218.7	43.3	1.000168
17000.0	542.3	-8.3	-21.4	33.7	712.8	634.2	219.6	42.5	1.000165
17500.0	531.8	-9.5	-24.1	29.2	702.2	632.8	220.8	41.4	1.000161
18000.0	521.4	-10.5	-25.9	24.3	691.1	631.6	221.5	39.5	1.000158
18500.0	511.2	-11.2	-30.2	19.0	679.5	630.7	222.2	37.4	1.000154
19000.0	501.2	-11.9	-34.2	13.6	668.1	629.7	221.8	37.6	1.000151
19500.0	491.3	-12.8	-35.4	13.0	657.2	628.7	221.5	38.2	1.000148
20000.0	481.5	-13.7	-36.1	13.0	646.5	627.5	223.7	40.7	1.000146
20500.0	472.0	-14.6	-36.9	13.0	636.0	626.4	223.9	43.4	1.000143
21000.0	462.6	-14.7	-36.9	13.0	623.3	626.4	228.9	46.6	1.000140
21500.0	453.4	-14.7	-36.6	13.4	611.0	626.4	231.5	49.5	1.000138
22000.0	444.4	-15.8	-35.9	15.7	601.4	625.0	233.4	50.7	1.000136
22500.0	435.5	-16.9	-35.5	10.1	591.9	623.7	235.2	51.9	1.000134
23000.0	426.8	-18.0	-35.2	20.4	582.6	622.3	236.7	51.1	1.000132
23500.0	418.2	-18.8	-26.4	50.8	572.3	621.6	233.4	50.4	1.000132

STATION ALTITUDE 4051.37 FEET MSL  
20 MAY 81 0900 HRS PDT  
ASCENSION NO. 96

UPPER AIR DATA  
1400160090  
LC-37

GEODETIC COORDINATES  
32.40175 LAT DEG  
106.51232 LONG DEG

TABLE 12 CONT

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup> METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TH)	SPEED KNOTS	INDEX OF REFRACTION
24000.0	409.7	-19.6	56.5	562.5	620.6	240.2	50.6	1.000130
24500.0	401.4	-20.8	57.4	553.7	619.1	242.0	50.9	1.000127
25000.0	393.2	-21.6	53.2	544.2	616.1	243.2	50.5	1.000125
25500.0	385.2	-22.3	47.5	534.6	617.2	244.3	49.9	1.000122
26000.0	377.3	-23.2	42.9	525.7	616.0	245.4	48.7	1.000120
26500.0	369.5	-24.5	40.2	517.6	614.4	241.8	47.4	1.000117
27000.0	361.9	-25.8	39.0	509.6	612.7	241.1	47.2	1.000115
27500.0	354.3	-27.2	39.0	501.7	611.1	240.5	47.1	1.000113
28000.0	347.0	-28.5	39.0	493.9	609.4	241.0	47.0	1.000111
28500.0	339.6	-29.7	36.5	485.9	607.9	241.7	46.9	1.000109
29000.0	332.5	-30.9	33.4	478.1	606.4	242.2	46.8	1.000107
29500.0	325.4	-31.9	30.2	469.9	605.1	242.8	46.7	1.000105
30000.0	318.5	-32.8	26.9	461.6	604.0	244.8	46.7	1.000103
30500.0	311.7	-33.7	23.5	453.3	602.9	246.8	46.8	1.000102
31000.0	305.0	-34.7	15.5**	445.5	601.6	249.4	46.8	1.000100
31500.0	298.4	-36.0		438.4	599.9	252.1	46.8	1.000098
32000.0	291.8	-37.5		431.4	593.1	254.0	47.1	1.000096
32500.0	285.4	-38.9		424.5	590.2	255.4	47.4	1.000095
33000.0	279.2	-40.3		417.7	594.4	256.2	47.7	1.000093
33500.0	273.0	-41.8		411.1	592.6	256.6	47.8	1.000092
34000.0	267.0	-43.2		404.6	590.7	257.0	47.6	1.000090
34500.0	261.1	-44.5		397.7	589.1	257.4	47.3	1.000089
35000.0	255.2	-45.6		390.7	587.7	258.2	46.7	1.000087
35500.0	249.5	-46.8		383.8	586.2	259.2	46.0	1.000085
36000.0	243.6	-48.4		377.6	584.0	260.2	45.5	1.000084
36500.0	237.9	-50.1		371.6	581.8	261.1	45.1	1.000083
37000.0	232.3	-51.8		365.6	579.7	262.5	44.9	1.000081
37500.0	226.9	-53.4		359.7	577.5	264.2	44.8	1.000080
38000.0	221.6	-55.1		354.0	575.3	266.4	44.6	1.000079
38500.0	216.4	-56.8		348.4	573.1	268.7	44.5	1.000078
39000.0	211.3	-58.4		342.9	570.9	269.2	44.3	1.000076
39500.0	206.4	-60.1		337.4	568.7	269.5	44.2	1.000075
40000.0	201.6	-61.8		332.1	566.4	263.9	43.8	1.000074
40500.0	196.7	-62.7		325.6	565.1	268.2	43.4	1.000073
41000.0	191.9	-63.3		318.5	564.3	267.3	44.1	1.000071
41500.0	187.2	-63.9		311.6	563.5	266.5	45.1	1.000069
42000.0	182.6	-64.5		304.9	562.7	266.4	46.1	1.000068
42500.0	178.1	-65.1		298.3	561.9	266.9	47.2	1.000066
43000.0	173.7	-65.7		291.6	561.0	267.3	48.1	1.000065
43500.0	169.5	-66.4		285.5	560.2	267.4	48.2	1.000064

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4051.37 FEET MSL  
20 MAY 81 0900 HRS MDT  
ASCENSION NO. 96

UPPER AIR DATA  
1400180096  
LC-37

GEOGETIC COORDINATES  
32.40175 LAT DEG  
106.31232 LON DEG

TABLE 12 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (IN)	WIND SPEED KNOTS	INDEX OF REFRACTION.
44000.0	105.3	-67.2		279.6	559.1	267.0	48.2	1.000062
44500.0	161.2	-68.2		274.0	557.7	200.5	48.1	1.000061
45000.0	157.1	-68.8		267.9	556.9	264.6	48.0	1.000060
45500.0	153.2	-69.0		261.4	556.7	262.8	48.1	1.000058
46000.0	149.4	-69.4		255.3	556.1	261.6	48.5	1.000057
46500.0	145.6	-71.0		250.9	553.9	260.4	49.0	1.000056
47000.0	141.9	-72.6		246.5	551.7	259.3	49.5	1.000055
47500.0	138.3	-71.5		238.9	553.2	259.5	50.1	1.000053
48000.0	134.8	-69.4		230.5	550.1	259.2	50.6	1.000051
48500.0	131.4	-69.0		224.3	550.7	257.8	49.2	1.000050
49000.0	123.2	-60.6		218.3	557.2	250.4	47.9	1.000049
49500.0	125.0	-68.2		212.4	557.7	254.8	46.5	1.000047
50000.0	121.9	-66.6		205.5	559.9	253.0	45.0	1.000046
50500.0	118.8	-65.7		199.0	561.1	251.1	43.6	1.000044
51000.0	115.9	-65.7		194.6	561.2	250.8	44.7	1.000043
51500.0	113.1	-65.0		189.2	562.1	250.7	45.9	1.000042
52000.0	110.3	-62.6		182.5	565.3	251.1	46.1	1.000041
52500.0	107.6	-62.6		178.1	565.2	252.5	44.5	1.000040
53000.0	105.0	-62.7		173.8	565.2	254.0	43.0	1.000039
53500.0	102.5	-62.3		169.3	565.7	256.8	36.0	1.000038
54000.0	100.0	-61.1		164.3	567.3	261.4	28.2	1.000037
54500.0	97.6	-59.8		159.3	569.0	267.9	20.9	1.000035
55000.0	95.2	-59.8		155.5	569.1	277.5	14.4	1.000035
55500.0	92.9	-60.1		152.0	568.6	300.7	8.8	1.000034
56000.0	90.7	-60.5		146.6	568.1	266.1	7.7	1.000033
56500.0	88.5	-60.8		145.2	567.7	263.5	8.1	1.000032
57000.0	86.4	-61.2		142.0	567.2	248.1	9.9	1.000032
57500.0	84.3	-61.5		138.8	566.7	241.4	12.4	1.000031
58000.0	82.3	-61.9		135.7	566.3	237.1	15.1	1.000030
58500.0	80.3	-60.6		131.6	567.9	237.6	12.7	1.000029
59000.0	78.4	-60.5		128.4	568.1	239.8	9.4	1.000029
59500.0	76.5	-61.4		125.8	568.9	240.5	6.3	1.000028
60000.0	74.6	-62.3		123.3	565.7	229.2	4.0	1.000027
60500.0	72.8	-62.6		120.5	565.3	193.5	2.1	1.000027
61000.0	71.1	-62.6		117.6	565.3	170.5	2.6	1.000026
61500.0	69.3	-62.2		114.5	565.8	171.3	3.2	1.000025
62000.0	67.7	-61.7		111.2	567.2	187.0	4.0	1.000025
62500.0	66.0	-60.2		108.0	568.6	200.6	5.7	1.000024
63000.0	64.5	-60.0		105.3	568.8	217.2	7.8	1.000023
63500.0	62.9	-60.2		102.9	568.5	224.3	10.8	1.000023



UPPER AIR DATA  
1400140096  
LC-37  
TABLE 12 CONT

STATION ALTITUDE 4051.37 FEET MSL  
20 MAY 61 0800 HRS MDT  
ASCENSION NO. 06

GEOLOGIC COORDINATES  
32.40175 LAT DEG  
106.31232 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (TN) DEGREES	SPEED KNOTS	INDEX OF REFRACTION
64000.0	61.4	-60.5		100.6	568.1	228.3	13.8	1.000022
64500.0	59.9	-60.7		98.3	567.8	236.7	16.1	1.000022
65000.0	59.5	-60.6		95.9	567.9	245.7	18.3	1.000021
65500.0	57.1	-59.9		93.3	569.0	252.5	19.5	1.000021
66000.0	55.8	-59.1		90.7	570.0	261.9	12.2	1.000020
66500.0	54.4	-58.3		86.3	571.0	293.6	6.1	1.000020
67000.0	53.1	-57.5		85.9	572.0	10.7	4.0	1.000019
67500.0	51.9	-56.8		83.5	573.1	63.9	7.7	1.000019
68000.0	50.6	-56.0		81.2	574.1	77.9	13.0	1.000018
68500.0	49.4	-55.5		79.1	574.7	92.5	11.0	1.000018
69000.0	48.3	-55.3		77.2	575.0	111.8	9.9	1.000017
69500.0	47.2	-55.1		75.4	575.3	116.5	10.3	1.000017
70000.0	46.1	-54.9		73.6	575.5	110.4	11.2	1.000016
70500.0	45.0	-54.7		71.8	575.8	105.4	12.2	1.000016
71000.0	44.0	-54.5		70.0	576.1	102.0	12.9	1.000016
71500.0	42.9	-54.3		68.4	576.3	99.0	13.8	1.000015
72000.0	41.9	-54.1		66.7	576.6	96.6	13.8	1.000015
72500.0	41.0	-53.9		65.1	576.9	94.3	13.3	1.000014
73000.0	40.0	-53.7		63.5	577.1	91.7	12.9	1.000014
73500.0	39.1	-53.5		62.0	577.4	87.4	12.5	1.000014
74000.0	38.2	-53.3		60.5	577.7	82.8	12.2	1.000013
74500.0	37.3	-53.1		59.0	577.9	80.4	12.3	1.000013
75000.0	36.4	-52.9		57.6	578.2	81.3	12.8	1.000013
75500.0	35.6	-52.7		56.2	578.5	82.2	13.4	1.000013
76000.0	34.8	-52.5		54.9	578.7	82.6	14.1	1.000012
76500.0	34.0	-52.3		53.5	579.0	83.0	14.8	1.000012
77000.0	33.2	-52.1		52.3	579.3	83.3	15.6	1.000012
77500.0	32.4	-51.9		51.0	579.5	81.9	15.5	1.000011
78000.0	31.6	-51.7		49.8	579.8	80.5	15.3	1.000011
78500.0	30.9	-51.5		48.6	580.1	79.7	14.5	1.000011
79000.0	30.2	-51.3		47.4	580.3	81.3	11.7	1.000011
79500.0	29.5	-50.9		46.2	580.8	83.9	8.9	1.000010
80000.0	28.8	-50.5		45.1	581.2	84.5	7.3	1.000010
80500.0	28.2	-50.2		44.0	581.7	81.8	6.8	1.000010
81000.0	27.5	-49.8		42.9	582.2	78.7	6.4	1.000010
81500.0	26.9	-49.4		41.9	582.7	77.3	6.7	1.000009
82000.0	26.3	-49.0		40.9	583.2	80.7	9.6	1.000009
82500.0	25.7	-48.7		39.9	583.7	82.5	12.5	1.000009
83000.0	25.1	-48.3		38.9	584.2	83.6	15.5	1.000009
83500.0	24.5	-47.9		37.9	584.7	90.0	16.6	1.000008

STATION ALTITUDE 4051.37 FEET MSL  
 20 MAY 81 0900 IRS MDT  
 ASCENSION NO. 96

UPPER AIR DATA  
 1400160096  
 LC-37  
 TABLE 12 CONT

GEODETIC COORDINATES  
 32.40175 LAT DEG  
 106.31232 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CELSIUS	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KILOTS	WIND DATA DIRECTION DEGREES (TN)	INDEX OF REFRACTION.
84000.0	24.0	-47.6		37.0	585.0	90.9	1.000008
84500.0	23.4	-47.5		36.2	585.2	103.0	1.000008
85000.0	22.9	-47.4		35.3	585.4	110.1	1.000008
85500.0	22.4	-47.2		34.5	585.5	122.7	1.000008
86000.0	21.9	-47.1		33.7	585.7	140.2	1.000008
86500.0	21.4	-47.0		32.9	585.9	161.0	1.000007
87000.0	20.9	-46.9		32.2	586.0	177.0	1.000007
87500.0	20.4	-46.7		31.4	586.2	191.1	1.000007
88000.0	20.0	-46.6		30.7	586.4	202.4	1.000007
88500.0	19.5	-45.9		29.9	587.2	205.1	1.000007
89000.0	19.1	-45.3		29.2	588.0	199.3	1.000006
89500.0	18.7	-44.7		28.5	588.8	191.0	1.000006
90000.0	18.3	-44.1		27.8	589.6	179.1	1.000006
90500.0	17.9	-43.4		27.1	590.4	154.4	1.000006
91000.0	17.5	-42.8		26.4	591.2	124.2	1.000006
91500.0	17.1	-42.2		25.6	592.0	101.2	1.000006
92000.0	16.7	-41.6		25.1	592.8	89.0	1.000006
92500.0	16.4	-41.0		24.5	593.6	82.1	1.000005
93000.0	16.0	-40.3		23.9	594.4	76.7	1.000005
93500.0	15.6	-39.7		23.3	595.2	72.9	1.000005
94000.0	15.3	-39.1		22.8	596.0	70.5	1.000005
94500.0	15.0	-38.5		22.2	596.8	68.5	1.000005
95000.0	14.6	-37.8		21.7	597.6	67.2	1.000005
95500.0	14.3	-37.2		21.1	598.4	68.0	1.000005
96000.0	14.0	-36.6		20.6	599.2	68.9	1.000005
96500.0	13.7	-36.0		20.1	600.0	70.2	1.000004
97000.0	13.4	-35.8		19.7	600.2	73.9	1.000004
97500.0	13.1	-35.7		19.2	600.3	78.7	1.000004
98000.0	12.8	-35.7		18.6	600.3	85.2	1.000004
98500.0	12.5	-35.7		18.4	600.4	95.7	1.000004
99000.0	12.3	-35.6		18.0	600.4	108.4	1.000004
99500.0	12.0	-35.6		17.6	600.4	122.5	1.000004
100000.0	11.8	-35.6		17.2	600.5	124.1	1.000004
100500.0	11.5	-35.5		16.9	600.5	119.7	1.000004
101000.0	11.3	-35.5		16.5	600.6	114.2	1.000004
101500.0	11.0	-35.5		16.1	600.6	98.9	1.000004
102000.0	10.8	-35.4		15.8	600.7	81.4	1.000004
102500.0	10.6	-35.4		15.5	600.7	70.6	1.000003
103000.0	10.3	-35.4		15.1	600.8		1.000003
103500.0	10.1	-35.3		14.8	600.8		1.000003

STATION ALTITUDE 9051.37 FEET MSL	UPPER AIR DATA	GEODETIC COORDINATES
20 MAY 81	1400160096	32.40175 LAT DEG
ASCENSION NO. 96	LC-37	106.31232 LON DEG
	TABLE 12 CON'T	

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
						DIRECTION DEGREES(TN)	SPEED KNOTS	
104000.0	9.9	-35.1		14.5	601.1			1.000003
104500.0	9.7	-34.6		14.1	601.7			1.000003

STATION ALTITUDE 4051.37 FEET MSL  
20 MAY 81 0900 HRS MDT  
ASCENSION NO. 96

MANDATORY LEVELS  
14001.00096  
LC-37

GEODETTIC COORDINATES  
32.40175 LAT DEG  
106.51232 LON DEG

TABLE 13

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.		WIND DATA	
MILLIBARS	FLEET	AIR DEGREES	DEWPOINT CENTIGRADE	PERCENT	DIRECTION DEGREES(TN)	SPEED KNOTS	
850.0	4936.	14.4	5.5	55.	153.8	9.1	
800.0	6606.	11.0	4.8	66.	170.0	17.4	
750.0	8378.	12.7	-8.6	22.	197.1	29.0	
700.0	10261.	8.0	-17.0	15.	207.3	32.8	
650.0	12255.	4.7	-20.0	14.	211.2	38.4	
600.0	14371.	-1.2	-17.3	28.	223.8	40.5	
550.0	16620.	-7.5	-19.6	37.	219.1	43.2	
500.0	19032.	-12.0	-34.7	13.	221.8	37.7	
450.0	21657.	-15.1	-36.3	14.	232.1	50.0	
400.0	24545.	-21.0	-27.0	58.	242.3	51.0	
350.0	27743.	-27.9	-37.6	39.	240.8	47.1	
300.0	31317.	-35.7			251.4	46.8	
250.0	35376.	-46.6			259.1	40.1	
200.0	40066.	-62.3			268.7	43.7	
175.0	42751.	-65.6			267.2	47.9	
150.0	45794.	-69.1			261.9	48.4	
125.0	49351.	-68.2			254.9	46.6	
100.0	53830.	-61.1			261.0	28.6	
80.0	58386.	-60.4			237.8	12.4	
70.0	61099.	-62.6			174.1	2.9	
60.0	64246.	-60.7			235.5	15.9	
50.0	68007.	-55.6			84.0	12.0	
40.0	72693.	-53.7			92.2	13.0	
30.0	78795.	-51.2			81.7	11.2	
25.0	82710.	-48.2			83.7	15.7	
20.0	87553.	-46.6			200.8	15.9	
15.0	93928.	-38.5			69.1	19.7	
10.0	103171.	-35.3					

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4126.59 FEET MSL  
28 MAY 81 0.90 HRS L.D.  
ASCENSION NO. 105

SIGNIFICANT LEVEL DATA  
1400010105  
HOLLOMAN

GEOCLITIC COORDINATES  
32.88865 LAT DEG  
106.09965 LON DEG

TABLE 14

PRESSURE	GEOMETRIC ALTITUDE	TEMPERATURE AIR	DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
MILLIBARS	MSL FEET			
874.2	4126.6	18.0	5.0	44.0
870.6	4242.7	18.6	4.4	39.0
850.0	4915.0	16.7	4.7	45.0
809.6	6273.8	14.9	4.6	50.0
766.8	7772.9	10.4	2.7	59.0
752.9	8273.6	10.1	2.2	58.0
740.4	8731.8	10.8	-4.4	54.0
730.6	9096.7	11.0	-6.3	29.0
700.0	10263.3	8.4	-11.0	24.0
627.6	13191.7	2.0	-10.6	20.0
561.8	16087.4	-5.7	-16.8	41.0
539.0	17149.6	-8.6	-21.9	33.0
500.0	19051.3	-12.2	-31.0	19.0
464.4	20896.4	-15.6	-33.9	19.0
448.6	21755.3	-15.7	-34.5	18.0
424.0	23147.4	-18.4	-30.6	33.0
416.3	23596.6	-19.5	-23.7	09.0
400.0	24570.4	-21.2	-26.2	04.0
381.2	25735.4	-23.2	-29.5	56.0
352.8	27586.1	-27.3	-35.6	44.0
326.6	29399.5	-31.6	-41.1	38.0
313.6	30342.7	-33.1	-44.4	31.0
300.0	31363.7	-35.6	-48.1	26.0
294.0	31825.4	-36.8	-49.2	
275.4	33303.8	-40.4		
250.0	35451.6	-45.7		
200.0	40214.3	-58.2		
159.6	44789.8	-68.0		
150.0	46014.0	-69.6		
141.8	47114.4	-71.3		
133.4	48308.8	-70.0		
129.2	48741.8	-66.6		
121.0	50253.9	-65.4		
117.2	50897.3	-63.5		
112.3	51771.2	-50.2		
109.8	52236.3	-59.5		
105.0	53005.0	-58.1		
100.0	54172.3	-59.7		
94.6	55313.7	-61.1		
70.0	61492.4	-60.8		

STATION ALTITUDE 4126.59 FEET MSL  
 20 MAY 81 0900 HRS MDT  
 ASCENSION NO. 105

SIGNIFICANT LEVEL DATA  
 1400010105  
 HOLLOWMAN  
 TABLE 14 CON'T

GEODETIC COORDINATES  
 32.08865 LAT DEG  
 106.09965 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	DEWPOINT PERCENT	REL. HUM. PERCENT
64.0	63345.9	-57.8		
57.0	65751.7	-59.1		
50.0	68091.6	-55.0		
39.0	73752.8	-53.8		
30.0	79362.1	-51.0		
20.0	88211.7	-44.9		
15.2	94334.9	-41.3		
13.1	97712.2	-36.8		

STATION ALTITUDE 4126.59 FEET MSL  
20 MAY 81 090 HRS MDY  
ASCENSION NO. 105

UPPER AIR DATA  
1400010105  
HOLLOWMAN

GEODETIC COORDINATES  
32.88865 LAT DEG  
106.09965 LON DEG

TABLE 15

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup>	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (TN) SPEED KNOTS	INDEX OF REFRACTION
4126.6	874.2	10.0	5.6	44.0	1041.9	660.1	170.0	1.000273
4500.0	862.7	17.9	4.6	41.3	1023.8	665.8	164.5	1.000267
5000.0	847.4	16.6	4.7	45.3	1015.0	664.4	161.6	1.000265
5500.0	832.4	15.9	4.7	47.2	999.2	663.7	160.3	1.000261
6000.0	817.6	15.3	4.6	49.0	983.7	662.9	160.7	1.000258
6500.0	803.0	14.2	4.3	51.4	969.6	661.7	163.2	1.000254
7000.0	788.6	12.7	3.8	54.4	957.3	660.0	166.5	1.000250
7500.0	774.4	11.2	3.1	57.4	945.2	658.2	171.0	1.000246
8000.0	760.5	10.3	2.5	58.5	931.3	657.0	179.0	1.000242
8500.0	746.7	10.4	-6	46.1	914.5	657.0	190.9	1.000231
9000.0	733.2	10.9	-5.8	30.3	897.2	657.3	202.5	1.000219
9500.0	719.9	10.1	-7.9	27.3	883.8	656.2	211.3	1.000213
10000.0	706.8	9.0	-9.9	25.1	871.4	654.9	212.6	1.000208
10500.0	693.8	7.9	-11.6	23.7	856.9	653.5	212.6	1.000203
11000.0	681.0	6.8	-12.9	23.0	846.4	652.2	211.2	1.000200
11500.0	668.5	5.7	-14.2	22.3	834.1	650.9	210.6	1.000196
12000.0	656.1	4.6	-15.4	21.6	822.0	649.6	210.3	1.000192
12500.0	644.0	3.5	-16.7	20.9	810.1	648.3	210.8	1.000189
13000.0	632.1	2.4	-18.1	20.3	798.4	647.0	211.4	1.000185
13500.0	620.2	1.2	-18.0	22.2	786.9	645.5	214.5	1.000183
14000.0	608.5	-1.1	-17.4	25.9	775.7	644.0	216.7	1.000181
14500.0	597.0	-1.5	-17.0	29.5	764.7	642.4	217.3	1.000179
15000.0	585.7	-2.8	-16.8	33.1	753.9	640.9	218.6	1.000176
15500.0	574.6	-4.1	-16.7	36.7	743.2	639.3	220.9	1.000174
16000.0	563.7	-5.5	-16.8	40.4	732.8	637.7	222.4	1.000172
16500.0	552.8	-6.8	-18.8	37.9	722.4	636.1	223.3	1.000168
17000.0	542.2	-8.2	-21.2	34.1	712.3	634.4	221.5	1.000165
17500.0	531.6	-9.3	-23.4	30.4	701.3	633.1	217.3	1.000161
18000.0	521.2	-10.2	-25.7	26.7	690.2	631.9	215.6	1.000158
18500.0	511.0	-11.2	-28.1	23.1	679.2	630.7	215.4	1.000155
19000.0	501.0	-12.1	-30.7	19.4	668.4	629.5	216.5	1.000151
19500.0	491.1	-13.0	-31.7	19.0	657.5	628.4	218.4	1.000149
20000.0	481.4	-13.9	-32.5	19.0	646.8	627.3	221.2	1.000146
20500.0	471.8	-14.9	-33.3	19.0	636.2	626.2	224.7	1.000144
21000.0	462.5	-15.6	-34.0	18.9	625.4	625.3	228.6	1.000141
21500.0	453.2	-15.7	-34.3	18.3	613.1	625.2	232.6	1.000138
22000.0	444.2	-16.2	-33.5	20.6	602.0	624.6	234.6	1.000136
22500.0	435.3	-17.1	-32.0	26.0	592.1	623.4	235.8	1.000134
23000.0	426.5	-18.1	-30.9	31.4	582.4	622.3	236.7	1.000132
23500.0	417.9	-19.3	-24.8	61.3	573.1	621.0	237.4	1.000132

UPPER AIR DATA  
1400010105  
HOLLOMAN  
TABLE 15 CON'T

STATION ALTITUDE: 4126.55 FEET MSL  
20 MAY 81 0300 HRS MDT  
ASCENSION NO. 105

GEODETIC COORDINATES  
32.88065 LAT DEG  
106.09965 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup> METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
24000.0	409.5	-20.2	66.9	563.5	619.8	236.8	52.4	1.000130
24500.0	401.2	-21.1	64.4	554.0	618.7	240.5	53.0	1.000128
25000.0	393.0	-21.9	61.0	544.6	617.7	242.1	53.1	1.000125
25500.0	384.9	-22.8	57.6	535.3	616.6	243.7	53.2	1.000123
26000.0	377.0	-23.8	54.3	526.4	615.3	244.4	52.9	1.000120
26500.0	369.2	-24.9	51.0	517.9	614.0	244.9	52.5	1.000118
27000.0	361.6	-26.0	47.8	509.4	612.6	244.7	51.6	1.000116
27500.0	354.1	-27.1	44.6	501.2	611.2	244.4	50.7	1.000113
28000.0	346.6	-28.3	42.6	493.0	609.7	245.0	49.3	1.000111
28500.0	339.3	-29.5	41.0	485.0	608.2	245.7	47.9	1.000109
29000.0	332.2	-30.7	39.3	477.1	606.7	247.3	47.2	1.000107
29500.0	325.2	-31.8	37.3	469.2	605.3	248.9	46.7	1.000106
30000.0	318.3	-32.6	35.5	460.8	604.3	250.2	47.1	1.000103
30500.0	311.5	-33.5	30.2	452.7	603.1	251.1	48.1	1.000102
31000.0	304.8	-34.7	27.8	445.2	601.6	251.6	49.8	1.000100
31500.0	298.2	-36.0	26.0	437.9	600.0	251.9	51.2	1.000098
32000.0	291.7	-37.2	22.9**	430.7	598.4	252.3	52.5	1.000096
32500.0	285.4	-38.4	14.1**	423.5	596.9	253.0	52.7	1.000095
33000.0	279.1	-39.7	5.3**	416.4	595.3	253.7	52.6	1.000093
33500.0	273.0	-40.9		409.4	593.7	254.4	52.3	1.000091
34000.0	266.9	-42.1		402.4	592.1	255.1	51.9	1.000090
34500.0	261.0	-43.4		395.6	590.6	256.3	50.5	1.000088
35000.0	255.1	-44.6		388.9	589.0	257.6	49.1	1.000087
35500.0	249.4	-45.8		382.2	587.4	259.5	46.5	1.000085
36000.0	243.7	-47.1		375.6	585.7	261.7	43.8	1.000084
36500.0	238.0	-48.5		369.0	584.0	263.7	41.8	1.000082
37000.0	232.5	-49.8		362.6	582.3	265.7	40.0	1.000081
37500.0	227.1	-51.1		356.3	580.6	266.2	40.1	1.000079
38000.0	221.9	-52.4		350.1	578.8	266.0	41.1	1.000078
38500.0	216.7	-53.7		344.0	577.1	265.3	42.4	1.000077
39000.0	211.7	-55.0		338.1	575.4	264.2	43.9	1.000075
39500.0	206.8	-56.3		332.3	573.7	263.6	45.0	1.000074
40000.0	202.0	-57.6		326.6	571.9	263.6	45.0	1.000073
40500.0	197.2	-58.8		320.5	570.4	263.9	44.9	1.000071
41000.0	192.4	-59.9		314.3	568.9	263.1	43.7	1.000070
41500.0	187.7	-61.0		308.2	567.5	266.5	42.6	1.000069
42000.0	183.1	-62.0		302.2	566.1	267.9	40.8	1.000067
42500.0	178.7	-63.1		296.3	564.6	269.4	39.1	1.000066
43000.0	174.3	-64.2		290.6	563.2	268.6	39.3	1.000065
43500.0	170.1	-65.2		285.0	561.7	267.3	40.0	1.000063



STATION ALTITUDE 4126.59 FEET MSL  
 20 MAY 81 0900 HRS MDT  
 ASCENSION NO. 105

UPPER AIR DATA  
 1400010105  
 HOLLOWMAN  
 TABLE 15 CONT

GEODETIC COORDINATES  
 32.88865 LAT DEG  
 106.09965 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
44000.0	165.9	-66.3			279.5	560.3	265.4	42.1	1.000062
44500.0	161.9	-67.4			274.1	558.8	263.5	44.9	1.000061
45000.0	157.9	-68.3			268.5	557.6	262.3	47.2	1.000060
45500.0	154.0	-68.9			262.6	556.7	261.9	48.8	1.000058
46000.0	150.1	-69.6			256.9	555.8	261.4	50.2	1.000057
46500.0	146.3	-70.4			251.3	554.8	260.5	50.9	1.000056
47000.0	142.6	-71.1			245.9	553.7	259.6	51.7	1.000055
47500.0	139.0	-70.9			239.5	554.1	258.6	51.3	1.000053
48000.0	135.5	-70.3			232.8	554.8	257.6	50.9	1.000052
48500.0	132.1	-69.0			225.4	556.7	256.9	50.0	1.000050
49000.0	128.8	-66.5			217.2	560.0	256.3	48.9	1.000048
49500.0	125.6	-66.1			211.4	560.6	255.5	48.0	1.000047
50000.0	122.5	-65.6			205.7	561.2	254.3	47.6	1.000046
50500.0	119.5	-64.7			199.7	562.5	253.3	47.0	1.000044
51000.0	116.6	-63.0			193.3	564.8	252.7	44.6	1.000043
51500.0	113.8	-60.5			186.5	568.1	252.1	42.3	1.000042
52000.0	111.1	-59.3			181.0	569.6	251.9	38.3	1.000040
52500.0	108.4	-59.0			176.4	570.1	251.7	34.1	1.000039
53000.0	105.8	-58.1			171.4	571.3	251.2	30.1	1.000038
53500.0	103.3	-58.8			167.9	570.4	250.4	26.4	1.000037
54000.0	100.8	-59.5			164.4	569.5	249.3	22.6	1.000037
54500.0	98.4	-60.1			160.9	568.6	247.6	18.9	1.000036
55000.0	96.1	-60.7			157.5	567.8	245.1	15.2	1.000035
55500.0	93.7	-61.1			154.0	567.3	242.4	13.0	1.000034
56000.0	91.5	-61.1			150.3	567.3	238.8	10.8	1.000033
56500.0	89.3	-61.0			146.6	567.4	237.2	10.2	1.000033
57000.0	87.1	-61.0			143.1	567.4	237.4	10.6	1.000032
57500.0	85.0	-61.0			139.6	567.4	237.9	11.1	1.000031
58000.0	83.0	-61.0			136.3	567.5	239.0	12.3	1.000030
58500.0	81.0	-60.9			133.0	567.5	239.9	13.6	1.000030
59000.0	79.0	-60.9			129.7	567.5	240.1	14.2	1.000029
59500.0	77.1	-60.9			126.6	567.6	240.0	14.5	1.000028
60000.0	75.3	-60.9			123.5	567.6	240.1	14.8	1.000028
60500.0	73.5	-60.8			120.6	567.6	240.2	15.4	1.000027
61000.0	71.7	-60.8			117.6	567.7	240.4	15.9	1.000026
61500.0	70.0	-60.8			114.8	567.7	240.6	15.0	1.000026
62000.0	68.3	-60.0			111.6	568.8	240.9	13.7	1.000025
62500.0	66.7	-59.2			108.5	569.9	241.9	12.0	1.000024
63000.0	65.1	-58.4			105.6	571.0	246.4	9.3	1.000023
63500.0	63.5	-57.9			102.8	571.6	254.5	6.8	1.000023

STATION ALTITUDE 4126.59 FEET MSL  
20 MAY 81 09.00 HRS MDT  
ASCENSION NO. 105

UPPER AIR DATA  
1400010105  
HOLLOMAN

GEODETIC COORDINATES  
32.88865 LAT DEG  
106.09965 LON DEG

TABLE 15 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	REL. HUM. PERCENT	DENSITY GM/CURIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (IN) DEGREES	SPEED KNOTS	INDEX OF REFRACTION
64000.0	62.0	-58.2		100.5	571.2	262.0	5.0	1.000022
64500.0	60.5	-58.4		98.2	570.9	271.2	3.6	1.000022
65000.0	59.1	-58.7		96.0	570.5	285.5	2.5	1.000021
65500.0	57.7	-59.0		93.8	570.2	278.7	2.9	1.000021
66000.0	56.3	-58.7		91.5	570.5	273.0	3.3	1.000020
66500.0	55.0	-58.0		89.0	571.5	337.9	1.4	1.000020
67000.0	53.7	-57.2		86.6	572.5	54.1	5.4	1.000019
67500.0	52.4	-56.5		84.3	573.4	61.5	10.3	1.000019
68000.0	51.2	-55.7		82.0	574.4	68.0	12.1	1.000018
68500.0	50.0	-55.0		79.8	575.4	72.6	14.1	1.000018
69000.0	48.8	-54.9		77.9	575.6	77.1	12.9	1.000017
69500.0	47.7	-54.8		76.1	575.7	87.4	8.0	1.000017
70000.0	46.6	-54.7		74.2	575.9	122.0	4.0	1.000017
70500.0	45.5	-54.5		72.5	576.0	145.2	4.1	1.000016
71000.0	44.4	-54.4		70.7	576.2	154.8	4.8	1.000016
71500.0	43.4	-54.3		69.1	576.3	156.3	5.3	1.000015
72000.0	42.4	-54.2		67.4	576.5	136.0	5.5	1.000015
72500.0	41.4	-54.1		65.8	576.6	118.8	6.2	1.000015
73000.0	40.4	-54.0		64.2	576.8	104.6	8.1	1.000014
73500.0	39.5	-53.9		62.7	576.9	95.9	10.9	1.000014
74000.0	38.6	-53.7		61.2	577.1	90.8	13.8	1.000014
74500.0	37.7	-53.4		59.7	577.5	90.4	13.1	1.000013
75000.0	36.8	-53.2		58.3	577.8	90.4	11.9	1.000013
75500.0	35.9	-52.9		56.9	578.1	90.4	10.7	1.000013
76000.0	35.1	-52.7		55.5	578.5	82.4	9.9	1.000012
76500.0	34.3	-52.4		54.1	578.8	72.4	9.5	1.000012
77000.0	33.5	-52.2		52.8	579.1	61.7	9.3	1.000012
77500.0	32.7	-51.9		51.5	579.4	62.9	11.4	1.000011
78000.0	32.0	-51.7		50.3	579.8	64.9	13.7	1.000011
78500.0	31.2	-51.4		49.1	580.1	66.2	16.0	1.000011
79000.0	30.5	-51.2		47.9	580.4	67.3	14.3	1.000011
79500.0	29.8	-50.9		46.7	580.8	68.7	11.9	1.000010
80000.0	29.1	-50.6		45.6	581.2	70.7	9.5	1.000010
80500.0	28.5	-50.2		44.5	581.7	72.6	10.2	1.000010
81000.0	27.8	-49.9		43.4	582.1	73.8	11.6	1.000010
81500.0	27.2	-49.5		42.4	582.6	74.9	12.9	1.000009
82000.0	26.6	-49.2		41.4	583.0	81.6	14.9	1.000009
82500.0	26.0	-48.8		40.4	583.5	88.1	17.3	1.000009
83000.0	25.4	-48.5		39.4	583.9	93.0	19.8	1.000009
83500.0	24.8	-48.1		38.4	584.4	94.2	21.0	1.000009

STATION ALTITUDE 4126.59 FEET MSL 20 MAY 81 0900 HRS MDT ASCENSION NO. 105				UPPER AIR DATA 1400010105 HOLLOMAN			GEODETIC COORDINATES 32-88865 LAT DEG 106-09965 LON DEG		
TABLE 15 CON'T									
GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (TN)	SPEED KNOTS	INDEX OF REFRACTION
84000.0	24.3	-47.8			37.5	584.8	94.0	21.5	1.000008
84500.0	23.7	-47.5			36.6	585.3	93.7	21.9	1.000008
85000.0	23.2	-47.1			35.7	585.7	94.1	20.8	1.000008
85500.0	22.6	-46.8			34.8	586.2	95.0	18.3	1.000008
86000.0	22.1	-46.4			34.0	586.6	96.3	15.8	1.000008
86500.0	21.6	-46.1			33.2	587.0	100.1	13.2	1.000007
87000.0	21.1	-45.7			32.4	587.5	117.3	10.4	1.000007
87500.0	20.7	-45.4			31.6	587.9	142.5	9.1	1.000007
88000.0	20.2	-45.0			30.8	588.4	169.3	9.9	1.000007
88500.0	19.7	-44.7			30.1	588.8	167.7	9.5	1.000007
89000.0	19.3	-44.4			29.4	589.2	160.5	8.9	1.000007
89500.0	18.9	-44.1			28.7	589.5	152.4	8.5	1.000006
90000.0	18.5	-43.8			28.0	589.9	146.8	8.3	1.000006
90500.0	18.1	-43.6			27.4	590.3	145.3	8.3	1.000006
91000.0	17.7	-43.3			26.7	590.7	143.9	8.3	1.000006
91500.0	17.3	-43.0			26.1	591.1	142.5	8.3	1.000006
92000.0	16.9	-42.7			25.5	591.4	140.5	7.4	1.000006
92500.0	16.5	-42.4			24.9	591.8	137.9	6.5	1.000006
93000.0	16.1	-42.1			24.3	592.2	134.5	5.5	1.000005
93500.0	15.8	-41.8			23.8	592.6	116.6	5.2	1.000005
94000.0	15.4	-41.5			23.2	592.9	92.8	6.1	1.000005
94500.0	15.1	-41.1			22.7	593.5	77.0	7.7	1.000005
95000.0	14.8	-40.4			22.1	594.3			1.000005
95500.0	14.4	-39.7			21.6	595.2			1.000005
96000.0	14.1	-39.1			21.0	596.0			1.000005
96500.0	13.8	-38.4			20.5	596.9			1.000005
97000.0	13.5	-37.7			20.0	597.7			1.000004
97500.0	13.2	-37.1			19.5	598.6			1.000004

STATION ALTITUDE 4126.59 FEET MSL  
20 MAY 81 0900 HRS MDT  
ASCENSION NO. 105

MANDATORY LEVELS  
1400010105  
HOLLOMAN

TABLE 16

GEODETIC COORDINATES  
32.88865 LAT DEG  
106.09965 LON DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	4912.	16.7	4.7	45.	162.0	10.0
800.0	6600.	13.9	4.2	52.	163.6	23.6
750.0	8372.	10.3	1.0	52.	187.9	27.4
700.0	10254.	8.4	-11.0	24.	213.2	32.9
650.0	12246.	4.1	-16.1	21.	210.5	36.3
600.0	14361.	-1.1	-17.0	29.	217.1	40.9
550.0	16612.	-7.2	-19.4	37.	223.5	46.2
500.0	19025.	-12.2	-31.0	19.	216.7	41.5
450.0	21646.	-15.7	-34.4	18.	233.8	48.7
400.0	24520.	-21.2	-26.2	64.	240.7	53.0
350.0	27725.	-27.7	-36.3	43.	244.6	50.0
300.0	31302.	-35.6	-48.1	26.	251.8	50.8
250.0	35375.	-45.7			259.2	46.9
200.0	40119.	-58.2			263.7	45.0
175.0	42640.	-64.0			268.8	39.2
150.0	45892.	-69.6			261.4	50.2
125.0	49462.	-66.0			255.3	47.9
100.0	54007.	-59.7			248.9	21.5
80.0	58560.	-60.9			240.1	14.0
70.0	61284.	-60.8			240.6	15.1
60.0	64459.	-58.5			275.8	3.1
50.0	68236.	-55.0			72.3	13.9
40.0	72926.	-53.9			100.9	9.1
30.0	79025.	-51.0			68.1	12.7
25.0	82941.	-48.3			94.3	20.8
20.0	87800.	-44.9			171.9	10.0
15.0	94162.	-40.9			74.9	8.0

GEODLTIC COORDINATES  
33.16712 LAT UEG  
106.49511 LON UEG

SIGNIFICANT LEVEL DATA  
1400030035  
JALLEN

TABLE 17

STATION ALTITUDE 4051.00 FEET MSL  
20 MAY 81 0900 HRS MDT  
ASCENSION NO. 35

PRESSURE	GEOMETRIC ALTITUDE	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
876.0	4051.0	17.9	7.9	52.0
859.6	4581.1	16.4	7.1	54.0
850.0	4894.7	15.4	6.7	56.0
818.8	5931.9	12.5	5.7	63.0
798.8	6613.7	12.0	5.4	64.0
749.4	8360.3	8.1	3.6	73.0
720.2	9440.1	8.3	.1	56.0
700.0	10210.5	6.6	-3.1	50.0
644.8	12411.2	2.7	-11.9	33.0
581.4	15128.7	-4.1	-22.1	23.0
555.6	16300.3	-6.5	-18.1	39.0
538.4	17105.6	-8.3	-28.3	18.0
500.0	18983.3	-11.2	-30.7	18.0
479.8	20019.7	-13.4	-33.2	17.0
471.8	20440.8	-13.1	-32.9	17.0
425.0	23030.9	-18.7	-29.4	38.0
414.9	23620.0	-19.5	-22.9	74.0
400.0	24511.5	-21.3	-25.1	71.0
365.8	26663.3	-25.7	-31.5	58.0
330.4	29062.1	-31.8	-38.0	54.0
303.6	31014.6	-35.8	-45.2	37.0

GEODETIC COORDINATES  
33.16712 LAT UEG  
106.49511 LON UEG

UPPER AIR DATA  
1400030035  
JALLEN

TABLE 18

STATION ALTITUDE 4051.00 FEET MSL  
20 MAY 81 0900 HRS MDT  
ASCENSION NO. 35

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
4051.0	876.0	17.9	52.0	1043.7	666.2	180.0	9.9	1.000280
4500.0	862.1	16.6	53.7	1031.8	664.7	173.8	13.5	1.000276
5000.0	846.8	15.1	56.7	1018.9	662.9	169.9	17.7	1.000271
5500.0	831.7	13.7	60.1	1005.6	661.2	167.5	21.9	1.000268
6000.0	816.8	12.5	63.1	992.1	659.8	166.0	25.0	1.000263
6500.0	802.1	12.1	63.8	975.5	659.4	165.2	26.2	1.000259
7000.0	787.6	11.1	66.0	961.1	658.2	165.1	26.5	1.000255
7500.0	773.3	10.0	68.6	947.5	656.9	163.2	25.7	1.000251
8000.0	759.3	8.9	71.1	934.1	655.6	164.1	24.9	1.000247
8500.0	745.6	8.1	70.8	919.8	654.6	174.9	24.7	1.000242
9000.0	732.0	8.2	62.9	903.0	654.6	180.8	24.7	1.000234
9500.0	718.6	8.2	55.5	887.1	654.5	187.7	25.7	1.000227
10000.0	705.5	7.1	51.6	874.6	653.0	194.0	27.0	1.000220
10500.0	692.5	6.1	47.8	861.8	651.8	197.1	29.8	1.000214
11000.0	679.7	5.2	43.9	848.8	650.7	197.8	33.5	1.000208
11500.0	667.1	4.3	40.0	836.0	649.5	198.4	37.0	1.000203
12000.0	654.8	3.4	36.2	823.4	648.4	198.8	40.3	1.000197
12500.0	642.6	2.5	32.7	811.1	647.2	200.2	42.0	1.000193
13000.0	630.5	1.2	30.8	799.5	645.7	202.3	42.5	1.000188
13500.0	618.6	-0.0	29.0	788.2	644.2	205.1	43.5	1.000185
14000.0	606.9	-1.3	27.2	777.0	642.7	208.0	44.8	1.000181
14500.0	595.5	-2.5	25.3	765.9	641.1	211.4	47.1	1.000177
15000.0	584.3	-3.8	23.5	755.1	639.6	214.6	49.9	1.000174
15500.0	573.1	-4.9	21.5	743.6	638.4	216.9	52.6	1.000172
16000.0	562.1	-5.9	34.9	732.0	637.2	218.7	55.2	1.000170
16500.0	551.3	-6.9	33.8	720.8	635.9	218.7	55.9	1.000167
17000.0	540.6	-8.1	20.8	710.1	634.4	218.0	55.8	1.000162
17500.0	530.1	-8.9	18.0	698.6	633.4	216.0	54.7	1.000159
18000.0	519.8	-9.7	18.0	687.0	632.5	213.9	53.6	1.000156
18500.0	509.6	-10.5	18.0	675.6	631.5	214.6	53.6	1.000153
19000.0	499.7	-11.2	18.0	664.4	630.6	215.6	53.7	1.000151
19500.0	489.8	-12.3	17.5	653.9	629.3	218.2	54.4	1.000148
20000.0	480.2	-13.4	17.0	643.7	628.0	220.6	55.1	1.000145
20500.0	470.7	-13.2	17.5	630.6	628.2	222.4	55.2	1.000143
21000.0	461.3	-14.3	21.5	620.6	626.9	224.1	55.4	1.000141
21500.0	452.1	-15.4	25.6	610.7	625.6	225.7	55.7	1.000139
22000.0	443.0	-16.5	29.6	601.0	624.3	227.3	55.9	1.000137
22500.0	434.2	-17.6	33.7	591.5	623.0	228.8	56.1	1.000135
23000.0	425.5	-18.6	37.7	582.2	621.7	230.5	56.2	1.000133
23500.0	416.9	-19.3	66.7	571.8	620.9	232.6	55.7	1.000133

STATION ALTITUDE 4051.00 FEET MSL  
20 MAY 81 0300 HRS MDT  
ASCENSION NO. 35

UPPER AIR DATA  
1400030035  
JALLEN  
TABLE 18 CON'T

GEODETIC COORDINATES  
33.16712 LAT UEG  
106.49511 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREE DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (TN) DEGREES	SPEED KNOTS	INDEX OF REFRACTION
24000.0	406.5	-20.3	-23.9	72.7	562.3	619.8	234.6	55.4	1.000130
24500.0	400.2	-21.3	-25.1	71.0	553.1	618.5	236.1	55.5	1.000128
25000.0	392.0	-22.3	-26.6	68.0	544.0	617.2	237.4	55.7	1.000125
25500.0	383.9	-23.3	-28.0	65.0	535.0	615.9	237.5	56.6	1.000123
26000.0	376.0	-24.3	-29.5	62.0	526.2	614.7	237.6	57.7	1.000120
26500.0	368.3	-25.4	-31.0	59.0	517.5	613.4	237.2	59.4	1.000118
27000.0	360.6	-26.6	-32.4	57.4	509.2	611.9	236.9	61.2	1.000116
27500.0	353.0	-27.8	-33.7	56.6	501.1	610.3	237.3	62.5	1.000114
28000.0	345.6	-29.1	-35.1	55.8	493.2	608.7	237.8	63.7	1.000112
28500.0	338.4	-30.4	-36.4	54.9	485.4	607.1	238.7	64.4	1.000110
29000.0	331.3	-31.6	-37.8	54.1	477.7	605.5	239.9	64.9	1.000108
29500.0	324.2	-32.7	-39.5	50.2	469.6	604.2	240.7	66.1	1.000106
30000.0	317.2	-33.7	-41.3	45.8	461.5	602.9			1.000104
30500.0	310.4	-34.7	-43.2	41.5	453.6	601.6			1.000102
31000.0	303.8	-35.8	-45.1	37.1	445.8	600.3			1.000100

STATION ALTITUDE 4051.00 FEET MSL  
20 MAY 61 0900 HRS PDT  
ASCENSION NO. 35

MANDATORY LEVELS  
1430030035  
JALLEN  
TABLE 19

GEODLTIC COORDINATES  
33.16712 LAT DEG  
106.49511 LON DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.	WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE	PERCENT	DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	4891.	15.4	6.7	56.	170.6	16.8
800.0	6567.	12.0	5.4	64.	165.0	26.4
750.0	8332.	8.1	3.6	73.	173.0	24.8
700.0	10201.	6.6	-3.1	50.	196.4	27.7
650.0	12185.	3.1	-11.0	35.	198.9	41.6
600.0	14293.	-2.0	-18.9	26.	210.0	46.1
550.0	16540.	-7.1	-20.8	32.	210.6	55.9
500.0	18958.	-11.2	-30.7	18.	215.5	53.6
450.0	21589.	-15.6	-30.5	27.	226.0	55.7
400.0	24472.	-21.3	-25.1	71.	236.1	55.5
350.0	27662.	-28.3	-34.3	56.	237.5	63.0



STATION ALTITUDE 3080.00 FEET MSL  
20 MAY 61 1000 GRS ZDT  
ASCENSION NO. 051

SIGNIFICANT LEVEL DATA  
1400020351  
WHITE SATUR

GEOMETRIC COORDINATES  
32.40043 LAT DEG  
106.57033 LONG DEG

TABLE 20

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
878.9	3989.0	20.3	6.3	40.0
856.0	4329.8	16.0	8.4	53.0
794.6	6796.6	11.1	5.4	68.0
791.0	6921.2	10.6	4.9	68.0
776.2	7442.4	14.3	4.3	51.0
767.0	7773.0	14.1	-5.0	25.0
700.0	10279.4	8.6	-13.7	19.0
677.4	11168.6	7.5	-15.9	17.0
625.8	13290.3	2.1	-19.1	19.0
542.6	17003.6	-8.2	-19.7	39.0
526.4	17774.6	-10.2	-20.4	25.0
500.0	19072.6	-12.5	-32.4	17.0
487.2	19722.2	-13.8	-33.5	17.0
472.0	20514.8	-13.5	-33.9	16.0
449.0	21760.5	-15.3	-32.6	21.0
434.6	22568.5	-16.7	-28.8	34.0
427.0	23003.9	-17.6	-24.6	54.0
400.0	24605.0	-20.3	-28.4	48.0
311.0	30576.4	-33.9	-49.9	18.0
300.0	31403.1	-35.3		
274.8	33053.3	-41.5		
250.0	35077.0	-46.3		
235.8	36747.0	-49.8		
200.0	40231.0	-58.0		
177.0	42731.1	-64.3		
162.1	44488.1	-68.1		
157.9	45008.8	-67.4		
150.0	46022.9	-69.7		
142.3	47053.0	-71.8		
138.5	47583.0	-69.0		
132.0	48530.0	-69.4		
130.1	48816.7	-67.4		
124.8	49643.8	-67.2		
119.6	50497.0	-64.1		
116.0	51113.4	-64.7		
110.6	52044.9	-61.2		
105.7	53007.9	-62.1		
100.0	54146.1	-59.3		
92.0	55866.7	-60.0		
89.0	56547.6	-61.4		

STATION ALTITUDE 3489.00 FEET MSL  
20 MAY 81  
ASCENSION NO. 351

SIGNIFICANT LEVEL DATA  
14000-20351  
WHITE SANDS

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LON DEG

TABLE 20 CONT

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
80.6	58584.8	-59.8		
70.0	61483.6	-61.3		
67.6	62197.6	-61.8		
65.8	62752.6	-59.3		
59.4	64871.4	-58.9		
57.2	65659.2	-55.9		
50.0	68494.5	-54.8		
45.4	70541.7	-53.2		
39.5	73500.0	-54.1		
36.6	75131.4	-50.3		
30.0	79431.4	-49.5		
21.6	86604.3	-46.2		
20.0	88307.8	-43.5		
14.0	96393.3	-35.4		
11.7	100538.1	-35.0		
10.0	104202.8	-30.5		
8.6	107738.3	-33.1		
7.0	112579.7	-29.1		
5.2	119686.0	-25.4		

STATION ALTITUDE 3989.00 FEET MSL  
20 MAY 81  
ASCENSION NO. 351

UPPER AIR DATA  
1400020351  
WHITE SANDS  
TABLE 21

GEODETIC COORDINATES  
32.40043 LAT UEG  
106.37033 LON UEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup> METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
3989.0	878.9	20.3	40.0	1039.1	668.7	185.0	6.0	1.000274
4000.0	878.6	20.2	40.2	1038.9	668.7	184.7	6.1	1.000274
4500.0	863.1	18.0	47.1	1028.4	666.1	176.1	8.0	1.000273
5000.0	847.8	15.8	53.6	1017.7	663.7	170.9	10.1	1.000271
5500.0	832.7	14.5	57.6	1004.1	662.2	167.6	12.1	1.000267
6000.0	817.8	13.2	61.6	990.6	660.7	167.9	13.2	1.000264
6500.0	803.2	11.9	65.6	977.4	659.1	174.9	17.8	1.000260
7000.0	783.7	11.2	65.4	962.4	658.3	183.4	23.1	1.000255
7500.0	774.6	14.3	46.5	935.4	661.7	192.3	26.8	1.000243
8000.0	760.7	13.6	24.5	922.4	660.3	198.1	26.4	1.000223
8500.0	748.9	12.5	23.3	909.4	659.0	202.7	26.4	1.000218
9000.0	733.4	11.4	22.1	896.5	657.7	205.3	26.6	1.000214
9500.0	720.2	10.3	22.9	883.9	656.4	209.5	27.9	1.000209
10000.0	707.2	9.2	19.7	871.4	655.0	214.2	30.0	1.000205
10500.0	694.3	8.3	18.5	858.4	654.0	216.6	33.1	1.000201
11000.0	681.6	7.7	17.4	844.6	653.2	218.2	36.4	1.000197
11500.0	669.1	6.7	17.3	832.2	652.0	217.0	37.4	1.000194
12000.0	656.7	5.4	17.8	820.6	650.5	215.6	38.3	1.000191
12500.0	644.5	4.1	18.3	809.1	649.0	214.9	38.2	1.000188
13000.0	632.6	2.8	18.7	797.9	647.5	214.3	37.9	1.000185
13500.0	620.8	1.5	20.1	786.7	645.9	215.5	38.9	1.000182
14000.0	609.0	.1	22.8	775.6	644.3	216.9	40.0	1.000180
14500.0	597.4	-1.3	25.5	764.7	642.7	218.6	41.8	1.000178
15000.0	586.0	-2.6	28.2	754.0	641.0	219.9	43.5	1.000175
15500.0	574.9	-4.0	30.9	743.5	639.4	220.0	44.1	1.000173
16000.0	563.9	-5.4	33.6	733.1	637.7	220.0	44.3	1.000171
16500.0	553.2	-6.8	36.3	722.9	636.1	219.8	43.7	1.000168
17000.0	542.7	-8.2	39.0	712.9	634.4	219.9	41.7	1.000166
17500.0	532.1	-9.5	50.0	702.6	632.8	220.5	38.6	1.000161
18000.0	521.7	-10.6	23.6	691.9	631.4	220.8	36.6	1.000158
18500.0	511.5	-11.5	20.5	680.7	630.3	221.5	35.5	1.000155
19000.0	501.4	-12.4	17.4	669.7	629.2	225.0	38.3	1.000151
19500.0	491.5	-13.4	17.0	658.9	628.0	228.5	41.0	1.000149
20000.0	481.8	-13.7	16.6	648.8	627.6	232.2	43.7	1.000146
20500.0	472.3	-13.5	16.0	638.5	627.0	234.0	45.9	1.000143
21000.0	462.9	-14.2	17.9	628.6	627.0	234.7	47.8	1.000141
21500.0	453.7	-14.9	20.0	611.9	626.1	234.8	49.4	1.000138
22000.0	444.7	-15.7	22.9	601.5	625.2	234.9	50.9	1.000137
22500.0	435.8	-16.6	34.9	591.4	624.2	236.0	50.9	1.000135
23000.0	427.1	-17.6	53.8	581.7	623.0	237.1	51.0	1.000134

STATION ALTITUDE 3989.00 FEET MSL  
20 MAY 81 1000 HRS MDT  
ASCENSION NO. 351

UPPER AIR DATA  
1400020351  
WHITE SANDS

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LON DEG

TABLE 21 CONT

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup> METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
23500.0	416.4	-18.4	52.1	571.9	622.0	238.8	49.8	1.000132
24000.0	410.0	-19.3	50.3	562.3	620.9	240.5	48.6	1.000129
24500.0	401.7	-20.1	48.4	552.8	619.9	242.1	47.7	1.000127
25000.0	393.4	-21.2	46.0	543.7	618.5	243.7	47.0	1.000124
25500.0	385.2	-22.3	43.5	534.8	617.1	243.6	46.3	1.000122
26000.0	377.2	-23.5	41.0	526.0	615.7	243.0	50.2	1.000119
26500.0	369.3	-24.6	38.5	517.5	614.3	242.4	51.4	1.000117
27000.0	361.6	-25.8	36.0	509.0	612.8	241.7	52.5	1.000115
27500.0	354.1	-26.9	33.5	500.7	611.4	242.5	51.9	1.000113
28000.0	346.7	-28.0	30.9	492.6	610.0	243.5	51.2	1.000111
28500.0	339.4	-29.2	28.4	484.6	608.6	244.9	50.4	1.000109
29000.0	332.4	-30.3	25.9	476.7	607.1	246.4	49.7	1.000107
29500.0	325.4	-31.4	23.4	469.0	605.7	247.5	49.3	1.000105
30000.0	318.6	-32.6	20.9	461.4	604.3	248.5	49.1	1.000103
30500.0	312.0	-33.7	18.4	453.9	602.8	249.3	48.7	1.000102
31000.0	305.3	-35.1	8.8**	446.8	601.0	250.2	48.3	1.000100
31500.0	298.7	-36.6		439.8	599.2	251.2	47.8	1.000098
32000.0	292.2	-37.9		432.6	597.6	252.6	47.3	1.000096
32500.0	285.8	-39.2		425.5	595.9	254.3	46.8	1.000095
33000.0	279.5	-40.5		418.5	594.2	256.5	46.4	1.000093
33500.0	273.4	-41.8		411.6	592.6	258.8	46.1	1.000092
34000.0	267.3	-42.9		404.4	591.1	261.1	46.0	1.000090
34500.0	261.3	-44.1		397.3	589.7	263.2	46.2	1.000088
35000.0	255.5	-45.2		390.4	588.2	265.0	46.8	1.000087
35500.0	249.7	-46.4		383.6	586.7	266.7	47.3	1.000085
36000.0	244.1	-47.7		377.2	584.9	268.3	48.0	1.000084
36500.0	238.5	-49.1		370.9	583.1	269.6	48.3	1.000083
37000.0	233.0	-50.4		364.4	581.4	270.6	48.3	1.000081
37500.0	227.6	-51.6		357.8	579.9	270.9	48.1	1.000080
38000.0	222.2	-52.7		351.3	578.4	270.6	47.7	1.000078
38500.0	217.1	-53.9		344.9	576.8	270.5	47.6	1.000077
39000.0	212.0	-55.1		338.7	575.3	270.5	47.5	1.000075
39500.0	207.0	-56.3		332.6	573.7	270.9	47.4	1.000074
40000.0	202.2	-57.5		326.6	572.2	271.8	47.1	1.000073
40500.0	197.4	-58.7		320.6	570.5	271.6	46.8	1.000071
41000.0	192.6	-59.9		314.7	568.9	271.2	46.4	1.000070
41500.0	188.0	-61.2		309.0	567.2	270.8	45.7	1.000069
42000.0	183.4	-62.5		303.3	565.5	270.5	44.9	1.000068
42500.0	179.0	-63.7		297.8	563.8	270.6	43.9	1.000066
43000.0	174.6	-64.9		292.1	562.2	271.5	43.0	1.000065

\*\* AT LAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.00 FEET MSL  
20 MAY 81 100 HRS MDY  
ASCENSION NO. 351

UPPER AIR DATA  
1400020351  
WHITE SANDS

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LON DEG

TABLE 21 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDX OF REFRACTION
43500.0	170.3	-66.0		296.4	560.8	272.3	42.0	1.000064
44000.0	160.1	-67.0		280.8	559.3	270.6	41.1	1.000063
44500.0	162.0	-68.1		275.2	557.9	268.8	40.2	1.000061
45000.0	153.6	-67.4		267.5	558.8	265.6	40.7	1.000060
45500.0	154.0	-68.5		262.2	557.3	262.1	41.8	1.000058
46000.0	150.2	-69.6		257.1	555.8	259.9	43.6	1.000057
46500.0	140.4	-70.7		251.9	554.4	258.8	45.9	1.000056
47000.0	142.7	-71.7		246.7	553.0	257.9	47.9	1.000055
47500.0	139.1	-69.4		237.9	556.0	257.9	48.0	1.000053
48000.0	135.6	-69.2		231.6	556.4	257.8	48.1	1.000052
48500.0	132.2	-69.4		226.0	550.1	257.7	47.3	1.000050
49000.0	120.9	-67.4		218.2	558.9	257.3	46.2	1.000049
49500.0	125.7	-67.2		212.7	559.0	257.3	45.1	1.000047
50000.0	122.6	-65.9		206.1	560.8	257.0	44.5	1.000046
50500.0	119.6	-64.1		199.3	563.3	250.8	43.8	1.000044
51000.0	116.7	-64.6		194.8	562.6	250.8	42.9	1.000043
51500.0	113.8	-63.2		188.9	564.4	257.0	41.9	1.000042
52000.0	111.0	-61.4		182.7	566.9	257.3	40.4	1.000041
52500.0	108.4	-61.6		178.5	566.6	258.3	37.2	1.000040
53000.0	105.7	-62.1		174.5	566.0	259.5	34.0	1.000039
53500.0	103.2	-60.9		169.4	567.6	259.8	30.1	1.000038
54000.0	100.7	-59.7		164.3	569.2	259.5	25.8	1.000037
54500.0	98.3	-59.4		160.2	569.5	250.8	21.7	1.000036
55000.0	95.9	-59.6		156.6	569.2	255.7	18.6	1.000035
55500.0	93.6	-59.9		153.0	569.0	251.3	15.6	1.000034
56000.0	91.4	-60.3		149.6	568.4	249.3	12.9	1.000033
56500.0	89.2	-61.3		146.7	567.0	249.2	10.4	1.000033
57000.0	87.1	-61.0		143.0	567.4	249.1	8.2	1.000032
57500.0	85.0	-60.7		139.3	567.9	249.0	7.7	1.000031
58000.0	82.9	-60.3		135.7	568.4	250.2	7.2	1.000030
58500.0	80.9	-59.9		132.2	569.0	242.1	8.1	1.000029
59000.0	79.0	-60.0		129.1	568.8	233.5	9.9	1.000029
59500.0	77.1	-60.3		126.2	568.4	227.5	11.8	1.000028
60000.0	75.2	-60.5		123.3	568.1	221.6	12.3	1.000027
60500.0	73.4	-60.8		120.5	567.7	216.4	12.7	1.000027
61000.0	71.7	-61.0		117.7	567.4	212.5	12.8	1.000026
61500.0	69.9	-61.3		115.0	567.0	213.9	10.7	1.000026
62000.0	68.3	-61.7		112.4	566.6	210.1	8.7	1.000025
62500.0	66.6	-60.4		109.1	568.2	220.7	7.9	1.000024
63000.0	65.0	-59.3		105.9	569.8	226.4	8.2	1.000024

UPPER AIR DATA  
1400020351  
WHITE SANDS  
TABLE 21 CONT

STATION ALTITUDE 3989.00 FEET MSL  
20 MAY 81  
10 00 HRS EDT  
ASCENSION NO. 351

GEODETIC COORDINATES  
32.40043 LAT UEG  
106.37033 LON UEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (IN) SPEED KNOTS	INDEX OF REFRACTION
63500.0	63.5	-59.2		103.3	569.9	231.8	1.000023
64000.0	62.0	-59.1		100.8	570.0	241.0	1.000022
64500.0	60.5	-59.0		98.4	570.1	250.5	1.000022
65000.0	59.0	-58.4		95.8	570.9	259.6	1.000021
65500.0	57.6	-56.5		92.7	573.4	296.5	1.000021
66000.0	56.3	-55.8		90.2	574.4	36.1	1.000020
66500.0	55.0	-55.6		88.0	574.6	66.1	1.000020
67000.0	53.7	-55.4		85.9	574.9	76.5	1.000019
67500.0	52.4	-55.2		83.8	575.2	81.2	1.000019
68000.0	51.2	-55.0		81.7	575.4	85.9	1.000018
68500.0	50.0	-54.8		79.7	575.7	92.0	1.000018
69000.0	48.8	-54.4		77.8	576.2	100.3	1.000017
69500.0	47.7	-54.0		75.8	576.7	115.3	1.000017
70000.0	46.6	-53.6		73.9	577.2	140.1	1.000016
70500.0	45.5	-53.2		72.1	577.7	148.3	1.000016
71000.0	44.4	-53.3		70.4	577.6	131.8	1.000016
71500.0	43.4	-53.5		68.8	577.4	117.3	1.000015
72000.0	42.4	-53.6		67.3	577.2	110.1	1.000015
72500.0	41.4	-53.8		65.8	577.0	104.4	1.000015
73000.0	40.4	-53.9		64.3	576.8	100.5	1.000014
73500.0	39.5	-54.1		62.8	576.6	103.3	1.000014
74000.0	38.6	-52.9		61.0	578.1	107.1	1.000014
74500.0	37.7	-51.8		59.3	579.6	100.6	1.000013
75000.0	36.8	-50.6		57.6	581.2	90.1	1.000013
75500.0	35.0	-50.2		56.2	581.7	83.2	1.000013
76000.0	33.2	-50.1		54.9	581.8	87.5	1.000012
76500.0	34.4	-50.0		53.6	581.9	93.1	1.000012
77000.0	32.6	-50.0		52.4	582.0	98.2	1.000012
77500.0	32.8	-49.9		51.2	582.1	98.9	1.000011
78000.0	32.1	-49.8		50.0	582.3	99.6	1.000011
78500.0	31.3	-49.7		48.8	582.4	98.7	1.000011
79000.0	30.6	-49.6		47.7	582.5	92.6	1.000011
79500.0	29.9	-49.5		46.6	582.7	88.1	1.000010
80000.0	29.2	-49.2		45.5	583.0	86.2	1.000010
80500.0	28.6	-49.0		44.4	583.3	89.3	1.000010
81000.0	27.9	-48.8		43.3	583.6	91.7	1.000010
81500.0	27.3	-48.5		42.3	583.9	94.5	1.000009
82000.0	26.7	-48.3		41.3	584.1	100.6	1.000009
82500.0	26.1	-48.1		40.3	584.4	107.0	1.000009
83000.0	25.5	-47.9		39.4	584.7	112.9	1.000009

STATION ALTITUDE 3989.00 FEET MSL  
20 MAY 81  
ASCENSION NO. 351

UPPER AIR DATA  
1400020351  
WHITE SANDS

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LONG DEG

TABLE 21 CONT

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup>	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
							DIRECTION DEGREES (TN)	SPEED KNOTS	
83500.0	24.9	-47.6			38.5	585.0	119.4	16.6	1.000009
84000.0	24.3	-47.4			37.6	585.3	127.0	14.8	1.000008
84500.0	23.8	-47.2			36.7	585.6	133.8	13.2	1.000008
85000.0	23.2	-46.9			35.8	585.9	127.4	11.3	1.000008
85500.0	22.7	-46.7			35.0	586.2	118.7	9.7	1.000008
86000.0	22.2	-46.5			34.1	586.5	108.4	8.5	1.000008
86500.0	21.7	-46.2			33.3	586.8	101.1	8.1	1.000007
87000.0	21.2	-45.6			32.5	587.7	93.1	7.8	1.000007
87500.0	20.7	-44.8			31.6	588.7	85.5	7.7	1.000007
88000.0	20.3	-44.0			30.8	589.7	86.5	7.4	1.000007
88500.0	19.8	-43.3			30.1	590.6	87.4	7.2	1.000007
89000.0	19.4	-42.8			29.3	591.3	88.5	6.9	1.000007
89500.0	19.0	-42.3			28.6	591.9	84.2	6.9	1.000006
90000.0	18.6	-41.8			28.0	592.6	79.4	7.1	1.000006
90500.0	18.2	-41.3			27.3	593.2	74.7	7.2	1.000006
91000.0	17.8	-40.8			26.6	593.8	72.7	7.5	1.000006
91500.0	17.4	-40.3			26.0	594.5	72.1	7.9	1.000006
92000.0	17.0	-39.8			25.4	595.1	71.5	8.3	1.000006
92500.0	16.6	-39.3			24.8	595.7	70.4	8.7	1.000006
93000.0	16.3	-38.8			24.2	596.4	88.1	9.4	1.000005
93500.0	15.9	-38.3			23.6	597.0	97.8	10.5	1.000005
94000.0	15.6	-37.8			23.0	597.7	104.3	11.5	1.000005
94500.0	15.2	-37.3			22.5	598.3	104.3	11.5	1.000005
95000.0	14.9	-36.8			21.9	598.9	104.4	11.4	1.000005
95500.0	14.6	-36.3			21.4	599.6	104.4	11.4	1.000005
96000.0	14.2	-35.8			20.9	600.2	101.4	10.6	1.000005
96500.0	13.9	-35.4			20.4	600.7	97.7	9.9	1.000005
97000.0	13.6	-35.3			20.0	600.8	93.4	9.2	1.000004
97500.0	13.3	-35.3			19.5	600.8	95.3	9.3	1.000004
98000.0	13.1	-35.2			19.1	600.9	100.0	9.8	1.000004
98500.0	12.8	-35.2			18.7	601.0	104.1	10.4	1.000004
99000.0	12.5	-35.1			18.3	601.0	107.7	11.1	1.000004
99500.0	12.2	-35.1			17.9	601.1	110.9	11.8	1.000004
100000.0	12.0	-35.1			17.5	601.1	113.7	12.5	1.000004
100500.0	11.7	-35.0			17.1	601.2	116.3	13.2	1.000004
101000.0	11.5	-34.4			16.7	601.9	119.7	13.9	1.000004
101500.0	11.2	-33.8			16.3	602.7	122.7	14.7	1.000004
102000.0	11.0	-33.2			16.0	603.5	125.5	15.4	1.000004
102500.0	10.8	-32.6			15.6	604.2	127.5	15.2	1.000003
103000.0	10.5	-32.0			15.2	605.0	129.4	14.8	1.000003

UPPER AIR DATA  
1400020351  
WHITE SANDS  
TABLE 21 CON'T

STATION ALTITUDE 3989.00 FEET MSL  
20 MAY 61 1000 HRS MDT  
ASCENSION NO. 351

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CELSIUS	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup> METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (T)	SPEED KNOTS	INDEX OF REFRACTION
103500.0	10.3	-31.4		14.8	605.8	131.4	14.3	1.000003
104000.0	10.1	-30.7		14.5	606.5	133.5	13.8	1.000003
104500.0	9.9	-30.7		14.2	606.6	135.7	12.9	1.000003
105000.0	9.7	-31.1		13.9	606.1	138.2	12.1	1.000003
105500.0	9.5	-31.5		13.6	605.7	141.1	11.3	1.000003
106000.0	9.3	-31.8		13.4	605.2	144.3	10.7	1.000003
106500.0	9.1	-32.2		13.1	604.7	147.3	10.5	1.000003
107000.0	8.9	-32.6		12.9	604.3	150.4	10.3	1.000003
107500.0	8.7	-32.9		12.6	603.8	153.6	10.2	1.000003
108000.0	8.5	-32.9		12.3	603.9	155.0	10.0	1.000003
108500.0	8.3	-32.5		12.1	604.4	152.6	9.8	1.000003
109000.0	8.2	-32.1		11.8	604.9	150.1	9.7	1.000003
109500.0	8.0	-31.6		11.5	605.4	147.5	9.5	1.000003
110000.0	7.8	-31.2		11.2	605.9	142.7	9.5	1.000003
110500.0	7.6	-30.8		11.0	606.5	134.6	10.1	1.000002
111000.0	7.5	-30.4		10.7	607.0	127.6	10.9	1.000002
111500.0	7.3	-30.0		10.5	607.5	121.5	11.8	1.000002
112000.0	7.2	-29.6		10.3	608.0	114.8	13.1	1.000002
112500.0	7.0	-29.2		10.0	608.5	107.1	14.8	1.000002
113000.0	6.9	-28.9		9.8	608.9	101.2	16.8	1.000002
113500.0	6.7	-28.6		9.6	609.2	98.5	19.0	1.000002
114000.0	6.6	-28.4		9.4	609.5	93.5	21.1	1.000002
114500.0	6.5	-28.1		9.2	609.8	92.1	22.9	1.000002
115000.0	6.3	-27.8		9.0	610.2	91.0	24.8	1.000002
115500.0	6.2	-27.6		8.8	610.5	90.0	26.7	1.000002
116000.0	6.1	-27.3		8.6	610.8			1.000002
116500.0	5.9	-27.1		8.4	611.1			1.000002
117000.0	5.8	-26.8		8.2	611.5			1.000002
117500.0	5.7	-26.5		8.0	611.8			1.000002
118000.0	5.6	-26.3		7.9	612.1			1.000002
118500.0	5.5	-26.0		7.7	612.4			1.000002
119000.0	5.4	-25.8		7.5	612.8			1.000002
119500.0	5.2	-25.5		7.4	613.1			1.000002



STATION ALTITUDE 3939.00 FEET MSL  
20 MAY 81 1000 HRS PDT  
ASCENSION NO. 351

MANDATORY LEVELS  
1400020351  
WHITE SANDS  
TABLE 22

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LON DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	4926.	16.0	6.4	53.	171.5	9.8
800.0	6605.	11.6	5.6	66.	176.5	19.1
750.0	8385.	12.8	-7.5	24.	202.1	26.4
700.0	10269.	8.6	-13.7	19.	215.7	31.6
650.0	12266.	4.7	-17.5	18.	215.2	38.3
600.0	14384.	-9	-18.5	25.	218.3	41.4
550.0	16635.	-7.2	-19.4	37.	219.7	43.5
500.0	19046.	-12.5	-32.4	17.	225.4	38.6
450.0	21672.	-15.2	-32.6	21.	234.9	50.0
400.0	24564.	-20.3	-28.4	48.	242.4	47.6
350.0	27763.	-27.5	-39.1	32.	243.1	51.4
300.0	31340.	-36.3			250.9	48.0
250.0	35399.	-46.3			266.5	47.3
200.0	40134.	-58.0			272.2	47.1
175.0	42850.	-64.8			271.4	43.1
150.0	45899.	-69.7			259.9	43.6
125.0	49470.	-67.2			257.3	45.0
100.0	53979.	-59.3			259.4	24.8
80.0	58545.	-59.9			238.1	8.9
70.0	61272.	-61.3			213.8	10.9
60.0	64431.	-58.9			252.9	8.3
50.0	68236.	-54.8			91.4	13.5
40.0	72940.	-54.0			101.5	7.7
30.0	79091.	-49.5			88.9	11.1
25.0	83025.	-47.7			117.4	17.2
20.0	87891.	-43.5			87.0	7.3
15.0	94331.	-37.0			104.4	11.4
10.0	103633.	-30.5			134.1	13.5
7.0	111919.	-29.1			106.8	14.9

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

GEODETIC COORDINATES  
33.16712 LAT DEG  
106.49511 LON DEG

SIGNIFICANT LEVEL DATA  
1400030036  
JALLEN  
TABLE 23

STATION ALTITUDE 4051.00 FEET MSL  
20 MAY 81 1000 HRS MDT  
ASCENSION NO. 36

PRESSURE	GEOMETRIC ALTITUDE	TEMPERATURE	REL. HUM.
MILLIHARS	MSL FEET	AIR DEWPOINT DEGREES CENTIGRADE	PERCENT
875.4	4051.0	20.6	46.0
850.0	4881.2	16.8	48.0
773.2	7499.0	9.3	69.0
757.0	8077.7	10.5	52.0
727.8	9152.6	9.7	30.0
700.0	10210.8	7.8	24.0
559.6	16128.5	-5.4	20.0
525.0	17766.2	-8.2	15.0
500.0	19005.0	-11.0	15.0
466.8	20733.2	-13.2	16.0
432.2	22646.5	-17.5	27.0
416.8	23536.2	-20.1	76.0
400.0	24536.5	-22.0	68.0
368.0	26539.0	-26.2	68.0
353.8	27472.7	-28.0	50.0
333.2	28883.1	-30.6	19.0
306.8	30798.6	-34.4	17.0
300.0	31313.1	-35.8	
250.0	35391.8	-46.6	
228.4	37343.1	-51.6	
200.0	40140.9	-58.3	
173.6	43028.9	-65.3	
155.4	45230.0	-69.3	
150.0	45925.5	-69.7	
138.6	47482.7	-68.6	
131.2	48578.1	-64.3	
120.0	50374.4	-65.2	
109.8	52161.7	-64.6	
106.4	52421.5	-62.6	
103.0	53459.4	-63.3	
100.0	54065.3	-59.8	
90.0	56225.1	-63.3	
87.2	56872.0	-59.5	
76.2	59643.6	-61.6	
70.0	61383.4	-60.7	
65.2	62853.9	-57.5	
55.2	66320.1	-58.4	
50.0	68393.2	-54.8	
48.2	69170.0	-53.7	
38.3	74052.9	-53.8	

STATION ALTITUDE 4051.00 FEET MSL  
20 MAY 81 1000 HRS MDT  
ASCENSION NO. 36

SIGNIFICANT LEVEL DATA  
1400030036  
JALLEN  
TABLE 23 CON'T

GEODETIC COORDINATES  
33.16712 LAT DEG  
106.49511 LON DEG

PRESSURE	GEOMETRIC ALTITUDE	TEMPERATURE AIR	DEWPOINT DEGREES	REL. HUM. PERCENT
MILLIBARS	MSL FEET		CENTIGRADE	
32.0	77899.2	-50.5		
30.0	79294.9	-49.3		
27.6	81108.0	-48.1		
20.0	88166.2	-46.0		
18.3	90140.0	-42.0		
15.4	94021.6	-40.4		
13.0	97809.5	-35.3		
10.0	103961.3	-34.2		
7.8	109768.8	-30.8		
7.0	112323.9	-29.5		
6.2	115204.4	-28.4		

STATION ALTITUDE 4051.00 FEET MSL  
 20 MAY 81 1100 HRS MDT  
 ASCENSION NO. 36

UPPER AIR DATA  
 1400030036  
 JALLEN  
 TABLE 24

GEODETIC COORDINATES  
 33.16712 LAT DEG  
 106.49511 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	INDEX OF REFRACTION
4051.0	875.4	20.6	46.0	1033.1	669.3	185.0	1.000279
4500.0	861.6	18.5	47.1	1024.4	666.8	177.8	1.000273
5000.0	840.4	16.5	49.0	1013.9	664.3	171.7	1.000267
5500.0	831.2	15.0	53.0	1000.0	662.7	167.0	1.000264
6000.0	816.3	13.6	57.0	987.6	661.1	164.5	1.000261
6500.0	801.7	12.2	61.0	974.8	659.4	167.9	1.000258
7000.0	787.3	10.7	65.0	962.2	657.7	171.0	1.000254
7500.0	773.2	9.3	69.0	949.8	656.0	178.0	1.000250
8000.0	759.2	10.3	54.3	929.7	657.1	184.5	1.000239
8500.0	745.4	10.2	43.4	914.0	656.7	191.0	1.000229
9000.0	731.9	9.6	33.1	899.2	656.0	196.2	1.000219
9500.0	718.6	9.1	28.0	885.4	655.0	199.4	1.000213
10000.0	705.5	8.2	25.2	872.3	653.9	202.2	1.000207
10500.0	692.4	7.2	23.8	859.4	652.7	204.4	1.000203
11000.0	679.4	6.0	23.5	846.7	651.3	206.0	1.000199
11500.0	666.7	4.9	23.1	834.3	650.0	206.4	1.000196
12000.0	654.2	3.8	22.8	822.0	648.7	206.7	1.000192
12500.0	641.9	2.7	22.5	809.9	647.3	200.7	1.000189
13000.0	629.9	1.6	22.1	798.0	646.0	207.8	1.000185
13500.0	618.1	.5	21.8	786.3	644.7	209.5	1.000182
14000.0	606.5	-.7	21.4	774.8	643.3	211.1	1.000179
14500.0	595.2	-1.8	21.1	763.4	642.0	212.6	1.000176
15000.0	584.0	-2.9	20.8	752.3	640.7	214.4	1.000173
15500.0	573.1	-4.0	20.4	741.3	639.3	215.7	1.000170
16000.0	562.3	-5.1	20.1	730.4	638.0	210.5	1.000167
16500.0	551.6	-6.0	18.9	719.0	636.9	210.4	1.000164
17000.0	540.9	-6.9	17.3	707.4	635.8	216.0	1.000161
17500.0	530.5	-7.7	15.8	696.0	634.8	216.0	1.000158
18000.0	520.2	-8.7	15.0	685.1	633.6	210.7	1.000155
18500.0	510.0	-9.9	15.0	674.6	632.2	218.2	1.000153
19000.0	500.1	-11.0	15.0	664.3	630.9	220.2	1.000150
19500.0	490.3	-11.6	15.3	652.9	630.1	222.1	1.000148
20000.0	480.6	-12.3	15.6	641.6	629.3	223.6	1.000145
20500.0	471.1	-12.9	15.9	630.5	628.6	224.9	1.000142
21000.0	461.8	-13.8	17.5	620.1	627.5	226.2	1.000140
21500.0	452.6	-14.9	20.4	610.4	626.1	227.6	1.000138
22000.0	443.6	-16.0	23.3	600.8	624.8	228.2	1.000136
22500.0	434.8	-17.2	26.2	591.5	623.4	228.9	1.000134
23000.0	426.0	-18.5	46.5	582.5	621.8	229.7	1.000134
23500.0	417.4	-20.0	74.0	573.9	620.1	230.4	1.000133

STATION ALTITUDE 4051.00 FEET NSL  
20 MAY 81 100 HRS MDT  
ASCENSION NO. 36

UPPER AIR DATA  
1400030030  
JALLEN

TABLE 24 CONT

GEOMETRIC COORDINATES  
33.16712 LAT DEG  
106.49511 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
24000.0	408.9	-21.0	72.3	564.5	618.9	231.1	61.0	1.000131
24500.0	400.6	-21.9	68.3	555.1	617.7	231.9	62.1	1.000128
25000.0	392.4	-23.0	68.0	546.0	616.4	232.5	62.2	1.000126
25500.0	384.3	-24.0	68.0	537.0	615.1	233.2	62.3	1.000123
26000.0	376.4	-25.1	68.0	528.2	613.8	234.1	61.7	1.000121
26500.0	368.6	-26.1	68.0	519.5	612.5	235.1	61.5	1.000119
27000.0	360.9	-27.1	59.1	510.8	611.2	236.2	62.6	1.000116
27500.0	353.4	-28.1	49.4	502.1	610.0	237.2	64.1	1.000114
28000.0	345.0	-29.0	38.4	493.5	608.8	238.3	65.6	1.000111
28500.0	338.7	-29.9	27.4	484.9	607.7	239.6	66.0	1.000109
29000.0	331.5	-30.8	18.9	476.6	606.5	240.8	66.8	1.000107
29500.0	324.5	-31.8	18.4	468.3	605.2	241.9	67.9	1.000105
30000.0	317.5	-32.8	17.8	460.2	604.0	243.0	70.1	1.000103
30500.0	310.8	-33.8	17.3	452.3	602.7	244.1	71.6	1.000101
31000.0	304.1	-34.9	10.3**	444.8	601.3	245.3	72.3	1.000099
31500.0	297.5	-36.3		437.6	599.6	246.7	70.1	1.000097
32000.0	290.9	-37.6		430.3	597.9	248.0	68.2	1.000096
32500.0	284.5	-38.9		423.2	596.2	249.0	66.7	1.000094
33000.0	278.2	-40.3		416.2	594.5	249.9	66.3	1.000093
33500.0	272.1	-41.6		409.3	592.8	250.7	66.3	1.000091
34000.0	266.0	-42.9		402.6	591.1	252.2	65.9	1.000090
34500.0	260.2	-44.2		395.9	589.4	253.6	65.5	1.000088
35000.0	254.4	-45.6		389.4	587.7	255.2	65.0	1.000087
35500.0	248.8	-46.9		383.0	586.0	256.8	64.5	1.000085
36000.0	243.1	-48.2		376.3	584.4	259.2	63.2	1.000084
36500.0	237.5	-49.4		369.8	582.7	261.9	61.8	1.000082
37000.0	232.1	-50.7		363.5	581.0	264.9	60.6	1.000081
37500.0	226.7	-52.0		357.1	579.4	268.1	59.5	1.000080
38000.0	221.4	-53.2		350.6	577.8	268.7	59.4	1.000078
38500.0	216.2	-54.4		344.3	576.2	268.9	59.4	1.000077
39000.0	211.1	-55.6		338.0	574.7	267.8	60.2	1.000075
39500.0	206.2	-56.8		331.9	573.1	266.6	61.2	1.000074
40000.0	201.3	-58.0		326.0	571.5	266.0	63.1	1.000073
40500.0	196.5	-59.2		319.9	569.9	265.5	65.1	1.000071
41000.0	191.8	-60.4		314.0	568.3	264.7	67.1	1.000070
41500.0	187.1	-61.6		308.1	566.6	264.0	69.2	1.000069
42000.0	182.6	-62.8		302.4	565.0	263.7	70.1	1.000067
42500.0	178.2	-64.0		296.8	563.4	263.6	70.8	1.000066
43000.0	173.8	-65.2		291.3	561.8	263.9	69.4	1.000065
43500.0	169.5	-66.2		285.3	560.5	264.2	67.8	1.000064

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

GEODETIC COORDINATES  
33.16712 LAT DEG  
106.49511 LONG DEG

UPPER AIR DATA  
1400030030  
JALLEN  
TABLE 24 CONT

STATION ALTITUDE 4051.00 FEET MSL  
20 MAY 81 10 10 HRS MDY  
ASCENSION NO. 36

GEODETIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup> METER	WIND DATA		INDEX OF REFRACTION	
		AIR DEGREES	DEWPOINT CENTIGRADE			DIRECTION DEGREES (TN)	SPEED KNOTS		
44000.0	160.3	-67.1			279.5	559.3	263.2	65.1	1.000062
44500.0	161.2	-63.0			273.7	558.0	261.8	62.3	1.000061
45000.0	157.2	-68.9			268.1	556.8	259.0	59.3	1.000060
45500.0	153.3	-69.5			262.1	556.0	255.9	56.9	1.000058
46000.0	149.4	-69.6			255.8	555.8	252.0	56.0	1.000057
46500.0	145.7	-69.3			249.0	556.2	250.1	55.3	1.000055
47000.0	142.0	-68.9			242.3	556.7	248.5	55.0	1.000054
47500.0	138.5	-68.5			235.8	557.3	247.0	53.6	1.000053
48000.0	135.1	-66.6			227.7	559.9	245.6	49.8	1.000051
48500.0	131.7	-64.6			220.0	562.6	244.2	46.0	1.000049
49000.0	128.5	-64.5			214.5	562.7	243.7	41.6	1.000048
49500.0	125.3	-64.8			209.5	562.4	243.0	37.2	1.000047
50000.0	122.3	-65.0			204.6	562.0	246.7	35.0	1.000046
50500.0	119.3	-65.2			199.7	561.8	250.8	33.0	1.000044
51000.0	116.3	-65.0			194.7	562.1	256.2	31.0	1.000043
51500.0	113.5	-64.8			189.7	562.3	262.4	29.3	1.000042
52000.0	110.7	-64.7			184.9	562.5	266.5	26.5	1.000041
52500.0	108.0	-62.7			178.7	565.2	269.4	22.6	1.000040
53000.0	105.4	-63.0			174.6	564.8	271.0	18.9	1.000039
53500.0	102.8	-63.0			170.4	564.8	269.3	15.1	1.000038
54000.0	100.3	-59.3			163.4	569.7	266.9	12.2	1.000036
54500.0	97.9	-59.7			159.8	569.2	264.8	11.3	1.000036
55000.0	95.5	-60.7			156.7	567.8	262.4	10.6	1.000035
55500.0	93.2	-61.8			153.7	566.4	259.6	11.3	1.000034
56000.0	91.0	-62.8			150.7	565.0	257.1	12.1	1.000034
56500.0	88.8	-61.7			146.3	566.5	253.7	11.5	1.000033
57000.0	86.7	-59.6			141.4	569.3	249.4	10.7	1.000031
57500.0	84.6	-60.0			138.2	568.8	244.9	9.6	1.000031
58000.0	82.5	-60.4			135.1	568.3	239.4	7.5	1.000030
58500.0	80.6	-60.7			132.1	567.8	229.9	5.6	1.000029
59000.0	78.6	-61.1			129.2	567.3	227.9	5.8	1.000029
59500.0	76.7	-61.5			126.3	566.8	229.4	6.8	1.000028
60000.0	74.9	-61.4			123.2	566.9	231.5	7.9	1.000027
60500.0	73.1	-61.2			120.1	567.2	234.7	9.6	1.000027
61000.0	71.3	-60.9			117.1	567.6	236.9	11.3	1.000026
61500.0	69.6	-60.4			114.0	568.2	236.8	7.3	1.000025
62000.0	67.9	-59.4			110.7	569.6	235.4	2.8	1.000025
62500.0	66.3	-58.3			107.5	571.1	54.2	2.5	1.000024
63000.0	64.7	-57.5			104.6	572.0	53.1	8.7	1.000023
63500.0	63.2	-57.7			102.2	571.9	52.4	14.3	1.000023

STATION ALTITUDE 1051.00 FEET MSL  
20 MAY 81 100 HRS MDT  
ASCENSION NO. 36

UPPER AIR DATA  
1400030036  
JALLEN

GEODETIC COORDINATES  
33.16712 LAT DEG  
106.49511 LON DEG

TABLE 24 CONT

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup>	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE				DIRECTION DEGREES (TN)	SPEED KNOTS	
64000.0	61.7	-57.8			99.8	571.7	48.8	16.1	1.000022
64500.0	60.2	-57.9			97.5	571.5	48.0	17.9	1.000022
65000.0	58.8	-58.1			95.3	571.4	46.0	18.1	1.000021
65500.0	57.4	-58.2			93.0	571.2	46.7	17.9	1.000021
66000.0	56.1	-58.3			90.9	571.0	50.0	17.4	1.000020
66500.0	54.7	-58.1			88.6	571.3	50.6	16.7	1.000020
67000.0	53.4	-57.2			86.2	572.5	63.5	16.2	1.000019
67500.0	52.2	-56.4			83.8	573.6	69.1	15.5	1.000019
68000.0	50.9	-55.5			81.5	574.8	75.2	15.0	1.000018
68500.0	49.7	-54.6			79.3	575.9	79.6	14.4	1.000018
69000.0	48.6	-53.9			77.2	576.8	82.4	13.7	1.000017
69500.0	47.5	-53.7			75.3	577.1	85.4	13.0	1.000017
70000.0	46.4	-53.7			73.6	577.1	88.1	12.4	1.000016
70500.0	45.3	-53.7			71.9	577.1	91.0	11.8	1.000016
71000.0	44.2	-53.7			70.2	577.1	94.2	11.3	1.000016
71500.0	43.2	-53.7			68.6	577.1	98.1	10.7	1.000015
72000.0	42.2	-53.8			67.0	577.0	102.4	10.2	1.000015
72500.0	41.2	-53.8			65.4	577.0	106.6	9.8	1.000015
73000.0	40.2	-53.8			63.9	577.0	110.6	9.4	1.000014
73500.0	39.3	-53.8			62.4	577.0	115.0	9.0	1.000014
74000.0	38.4	-53.8			61.0	577.0	99.8	11.5	1.000014
74500.0	37.5	-53.4			59.5	577.5	86.6	16.3	1.000013
75000.0	36.6	-53.0			58.0	578.1	79.7	21.6	1.000013
75500.0	35.8	-52.6			56.5	578.6	79.9	21.9	1.000013
76000.0	35.0	-52.1			55.1	579.2	80.8	21.5	1.000012
76500.0	34.2	-51.7			53.7	579.7	81.6	21.3	1.000012
77000.0	33.4	-51.3			52.4	580.3	77.9	25.1	1.000012
77500.0	32.6	-50.8			51.1	580.9	75.3	28.9	1.000011
78000.0	31.9	-50.4			49.8	581.4	73.9	31.6	1.000011
78500.0	31.1	-50.0			48.6	582.0	75.2	30.2	1.000011
79000.0	30.4	-49.6			47.4	582.5	76.5	28.8	1.000011
79500.0	29.7	-49.2			46.2	583.0	79.4	25.9	1.000010
80000.0	29.0	-48.8			45.1	583.5	80.4	20.7	1.000010
80500.0	28.4	-48.5			44.0	583.9	97.8	16.0	1.000010
81000.0	27.7	-48.2			42.9	584.3	111.2	13.3	1.000010
81500.0	27.1	-48.0			41.9	584.6	112.0	13.7	1.000009
82000.0	26.5	-47.8			41.0	584.8	112.7	14.1	1.000009
82500.0	25.9	-47.7			40.0	585.0	113.7	14.4	1.000009
83000.0	25.3	-47.5			39.1	585.2	123.9	13.3	1.000009
83500.0	24.7	-47.4			38.2	585.4	135.4	12.7	1.000008

STATION ALTITUDE 4051.00 FEET MSL  
20 MAY 81  
ASCENSION NO. 36

UPPER AIR DATA  
1400030036  
JALLEH

GEODETIC COORDINATES  
33.16712 LAT DEG  
106.49511 LON DEG

TABLE 24 CONT

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND		WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE			KNOTS	KNOTS	DIRECTION DEGREES (TN)	SPEED KNOTS	
84000.0	24.2	-47.2			37.3	585.5		147.6	12.6	1.000008
84500.0	23.6	-47.1			36.4	585.7		137.0	12.3	1.000008
85000.0	23.1	-46.9			35.6	585.9		120.9	12.8	1.000008
85500.0	22.6	-46.8			34.8	586.1		106.9	14.1	1.000008
86000.0	22.1	-46.6			34.0	586.3		97.8	15.5	1.000008
86500.0	21.6	-46.5			33.2	586.5		91.5	16.6	1.000007
87000.0	21.1	-46.3			32.4	586.7		86.1	17.9	1.000007
87500.0	20.6	-46.2			31.6	586.9		82.4	18.7	1.000007
88000.0	20.2	-46.0			30.9	587.1		80.9	18.2	1.000007
88500.0	19.7	-45.3			30.1	588.0		79.2	17.7	1.000007
89000.0	19.3	-44.3			29.3	589.3		77.8	17.0	1.000007
89500.0	18.8	-43.3			28.5	590.6		79.4	14.7	1.000006
90000.0	18.4	-42.3			27.8	591.9		81.6	12.4	1.000006
90500.0	18.0	-41.9			27.1	592.5		84.8	10.1	1.000006
91000.0	17.6	-41.6			26.5	592.8		89.9	8.8	1.000006
91500.0	17.2	-41.4			25.9	593.0		96.7	7.7	1.000006
92000.0	16.8	-41.2			25.3	593.3		105.5	6.8	1.000006
92500.0	16.5	-41.0			24.7	593.5		116.7	6.1	1.000005
93000.0	16.1	-40.8			24.2	593.8		120.5	5.9	1.000005
93500.0	15.8	-40.6			23.6	594.1		121.6	5.8	1.000005
94000.0	15.4	-40.4			23.1	594.3		122.7	5.7	1.000005
94500.0	15.1	-39.8			22.5	595.2		123.8	5.6	1.000005
95000.0	14.8	-39.1			22.0	596.0		121.0	5.6	1.000005
95500.0	14.4	-38.5			21.4	596.8		115.8	5.8	1.000005
96000.0	14.1	-37.8			20.9	597.7		110.9	6.0	1.000005
96500.0	13.8	-37.1			20.4	598.5		106.4	6.3	1.000005
97000.0	13.5	-36.5			19.9	599.3		106.0	6.2	1.000004
97500.0	13.2	-35.8			19.4	600.2		111.4	5.7	1.000004
98000.0	12.9	-35.3			18.9	600.8		117.7	5.3	1.000004
98500.0	12.7	-35.2			18.5	601.0		125.0	4.9	1.000004
99000.0	12.4	-35.1			18.1	601.1		133.7	4.7	1.000004
99500.0	12.1	-35.0			17.7	601.2		144.6	4.5	1.000004
100000.0	11.9	-34.9			17.4	601.3		155.9	4.5	1.000004
100500.0	11.6	-34.8			17.0	601.4		166.8	4.7	1.000004
101000.0	11.4	-34.7			16.6	601.5		176.5	5.0	1.000004
101500.0	11.1	-34.6			16.2	601.6		175.7	4.9	1.000004
102000.0	10.9	-34.6			15.9	601.8		174.5	4.8	1.000004
102500.0	10.7	-34.5			15.5	601.9		173.3	4.7	1.000003
103000.0	10.4	-34.4			15.2	602.0		172.0	4.6	1.000003
103500.0	10.2	-34.3			14.9	602.1		179.7	5.0	1.000003



GEODETIC COORDINATES  
33.16712 LAT DEG  
106.49511 LON DEG

UPPER AIR DATA  
1400030030  
JALLEN  
TABLE 24 CONT

STATION ALTITUDE 1051.00 FEET MSL  
20 MAY 81 1000 HRS MDT  
ASCENSION NO. 36

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
10400.0	10.0	-34.2		14.6	602.2	188.7	5.7	1.000003
10450.0	9.8	-33.9		14.2	602.6	195.7	6.5	1.000003
10500.0	9.6	-33.6		13.9	603.0	201.1	7.3	1.000003
10550.0	9.4	-33.3		13.6	603.3	197.4	8.1	1.000003
10600.0	9.2	-33.0		13.3	603.7	185.6	9.1	1.000003
10650.0	9.0	-32.7		13.0	604.1	176.4	10.4	1.000003
10700.0	8.8	-32.4		12.7	604.4	169.3	11.8	1.000003
10750.0	8.6	-32.1		12.4	604.8	164.2	13.5	1.000003
10800.0	8.4	-31.8		12.1	605.2	162.0	15.4	1.000003
10850.0	8.2	-31.5		11.9	605.5	160.2	17.3	1.000003
10900.0	8.1	-31.3		11.6	605.9	158.8	19.2	1.000003
10950.0	7.9	-31.0		11.3	606.3	157.7	21.1	1.000003
11000.0	7.7	-30.7		11.1	606.6	161.2	20.8	1.000002
11050.0	7.6	-30.4		10.9	606.9	165.6	20.4	1.000002
11100.0	7.4	-30.2		10.6	607.3	170.2	20.1	1.000002
11150.0	7.2	-29.9		10.4	607.6	174.9	19.9	1.000002
11200.0	7.1	-29.7		10.2	607.9			1.000002
11250.0	6.9	-29.4		9.9	608.2			1.000002
11300.0	6.8	-29.2		9.7	608.4			1.000002
11350.0	6.7	-29.1		9.5	608.7			1.000002
11400.0	6.5	-28.9		9.3	608.9			1.000002
11450.0	6.4	-28.7		9.1	609.1			1.000002
11500.0	6.3	-28.5		8.9	609.4			1.000002

STATION ALTITUDE 4051.00 FEET MSL  
20 MAY 81 1000 HRS MDT  
ASCENSION NO. 36

MANDATORY LEVELS  
1400030036  
JALLEN

GEODETTIC COORDINATES  
33.16712 LAT DEG  
106.49511 LON DEG

TABLE 25

PRESSURE GEOPOTENTIAL			TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE	DIRECTION DEGREES(TN)		SPEED KNOTS	
850.0	4878.	16.8	5.7	48.	173.0	14.0	
800.0	6560.	12.0	4.8	61.	168.3	19.7	
750.0	8325.	10.3	-5	47.	188.9	26.3	
700.0	10201.	7.8	-11.5	24.	203.1	33.6	
650.0	12189.	3.4	-15.9	23.	206.7	42.6	
600.0	14300.	-1.3	-20.6	21.	211.9	56.8	
550.0	16554.	-6.2	-26.2	19.	216.3	60.4	
500.0	18980.	-11.0	-32.5	15.	220.2	53.2	
450.0	21616.	-15.2	-32.4	21.	227.7	59.4	
400.0	24497.	-22.0	-26.3	68.	231.9	62.1	
350.0	27679.	-28.5	-36.8	44.	237.7	64.8	
300.0	31253.	-35.8			246.1	71.0	
250.0	35317.	-46.6			256.4	64.6	
200.0	40046.	-58.3			265.9	63.6	
175.0	42761.	-64.9			263.8	69.8	
150.0	45805.	-69.7			253.3	56.1	
125.0	49415.	-64.8			243.2	37.1	
100.0	53902.	-58.8			266.7	12.1	
80.0	58457.	-60.8			226.6	5.1	
70.0	61171.	-60.7			236.9	8.6	
60.0	64359.	-57.9			45.7	18.1	
50.0	68140.	-54.8			78.9	14.6	
40.0	72843.	-53.8			111.4	9.3	
30.0	76950.	-49.3			77.2	28.1	
25.0	82901.	-47.5			129.1	13.0	
20.0	87757.	-46.0			80.5	18.0	
15.0	94148.	-39.6			124.0	5.6	
10.0	103400.	-34.2			187.3	5.6	
7.0	111673.	-29.5					

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

**DATA  
FILM**